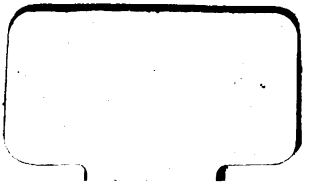

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CARUS

The Surd of Metaphysics

An Inquiry Into the Question

Are There Things-in-Themselves?

By

Dr. Paul Carus

Since Metaphysics of late
without heirs to her fathers was gathered,
Here at the auctioneer's
"things-in-themselves" will be sold.
—"Xenions" of Schiller and Goethe.

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FOREWORD.

THE subject discussed in this book is one of the most important of the problems of philosophy, and it is not difficult to understand that in its application to real life it is of a paramount practical nature, not only in the domains of ethics and religion, but also in our general attitude toward the world and in our every-day doings.

The idea of "things-in-themselves" originates as a natural phase in the evolution of human thought, and its formulation is as necessary as it is for certain purposes beneficial. In denouncing the belief in things-in-themselves as a superstition, we must therefore warn the student not to overlook the truth that is contained in it. For though there are no things-in-themselves, there are things, and, though it is not less wrong to hypostasise our ideas than it is to personify them in mythological figures, we must not regard them as *flatus vocis* only, as empty words, or mere names. For after all, they denote features of actual life which are real. And the concept of things-in-themselves underlies many other problems, where it is frequently so disguised as to be quite unrecognisable. For this reason it is not wise to deal with the subject off-hand, but to treat it in its connection with kindred questions in the domains of epistemology and metaphysics so called. Nor is it sufficient to state the solution only; it is also desirable to illustrate its importance by contrasting it with the views of philosophers that hold different opinions and still cling more or less to the antiquated belief in things-in-themselves.

Modern thought appears negative to the followers of the old schools, but it has its positive aspects, and these positive aspects should be made prominent. In doing so we shall not only be just to the old schools, but also establish the claim of modern thought to its due share of influence upon the events of the world.

When we recognise the Unknown, and also the infinitude of possible progress, we need no longer cling to the superstitious belief in the Unknowable. Further, when we understand that imagination, this child of sentiment and thought, has wings and that for all her erratic flights in the realm of fancy she now and then alights on a lofty crag in the ethereal realms of moral or religious aspiration to find there an important truth, which our slow-paced but sure-footed reason cannot as easily reach, we need neither insist upon the insufficiency and baseness of reason, nor extol the reliability of prophetic visions which are expressions of our religious instinct. In appreciating one faculty, we need not cast a slur upon the other.

The relation between the circumference and the diameter of the circle is quite definite and concrete, but if expressed of a numerical fraction its value can only be approximated, admitting of an infinite progress in accuracy. So the world is determinable and science is reliable in spite of the fact that her work can never be finished, and however much we progress and advance in the solution of life's problem, we can never reach the end. But this condition of things is not depressive to a healthy mind. On the contrary, it is an elevating idea that the source of knowledge will never run dry, and that the waters of life are inexhaustible.

THE AUTHOR.

TABLE OF CONTENTS.

THE ELIMINATION OF THE METAPHYSICAL SURD FROM PHILOSOPHY.

THE METAPHYSICAL RESIDUE IN THE SYSTEMS OF MODERN THINKERS

THE SOUL AS A THING-IN-ITSELF.

THE ELIMINATION OF THE METAPHYSICAL SURD FROM PHILOSOPHY.

THE FAUST ATTITUDE IN PHILOSOPHY.

FAUST had studied all the sciences, had taken degrees in the four faculties, and had become a famous professor in the university. Yet in the monologue with which Goethe opens his grand drama, he stands before us a self-confessed ignoramus, whose lectures are a mere waste of time, since he does not teach things worth knowing, and whose despair reaches its climax in the proclamation of the dreary doctrine that knowledge is impossible. He says:

"I've studied now Philosophy
And Jurisprudence, Medicine,—
And even, alas! Theology,—
From end to end, with labor keen;
And here, poor fool! with all my lore
I stand no wiser than before:
I'm Magister—yea, Doctor—hight,
And straight or cross-wise, wrong or right,
These ten years long, with many woes,
I've led my scholars by the nose,—
And see, that nothing can be known!"

Goethe's magnificent drama has exercised upon the minds of all civilised nations an influence little less than that of the Bible; and here we are confronted with a statement of the impossibility of scientific research. But if science is vain, what shall we do? Are we not like miners in search of useful and precious metals, groping our way in the dark labyrinth of excavations underground, with the assistance of the lamp of scientific method? If science after all is but vanity, had we not better extinguish our lamp and abandon ourselves to the mercy of circumstances?

The Faust attitude is apt to exercise a baneful influence upon youthful minds, who thus accustom themselves to find the acme of wisdom in the conclusion that cognition is an unprofitable sport, knowledge vain, and science the empty conceit of a deluded brain.

Faust's words are often quoted in order to give the prestige of Goethe's authority to the agnostic doctrine; but let us bear in mind that we must explain the words of the passage from its context; they contain the exposition of the dramatic plot, embodying Faust's fundamental error from which all his later mistakes arise. Far from being endorsed by Goethe, they are proposed for refutation, and Mephistopheles, behind Faust's back, triumphantly says:

> "Despise thou reason, scoff at science,
> Which are man's highest and best power,
> And thou art mine beyond recall."

["Verachte nur Vernunft und Wissenschaft,
Der Menschen allerhöchste Kraft,
Und du bist mein schon ganz gewiss!"]

The surrender of science is the way to perdition.

Faust began his studies from the top, not from the bottom. He began with philosophy, and we may well assume that the philosophy he studied consisted of that metaphysical verbiage which regards knowledge as a comprehension of things-in-themselves. Faust apparently imagines that so long as we do not know what things-in-themselves are, all our knowledge remains purely phenomenal and worthless. No wonder that he is desperate, for as he states himself, he "rummages in empty words."

According to the metaphysical method of philosophising, we know of gold that it is yellowish or reddish, that it is heavier than other metals, possessing in its pure state a certain specific weight, that it does not corrode, is ductile or malleable, etc.; but all our chemical knowledge avails us nothing unless we understand what the essence of gold is. John Locke, one of the soberest philosophers, adopts this line of argument saying:

As "it is plain that the word 'gold' stands in the place of a substance, having the real essence of a species of things made by nature," our notion that gold is something fixed, "is a truth which will always fail us in its particular application, and so is of no real use or certainty . . . For if we know not the real

essence of gold, it is impossible we should know what parcel of matter has that essence, and so whether it be true gold or no."—*An Essay Concerning Human Understanding*, III, vi, 50.

Phenomenal knowledge apparently touches only the surface of existence, and we are told that what we need is metaphysical knowledge; but metaphysical knowledge can be as little obtained as the blue flower of Wonderland in the hopeless quest of which the knights-errant of yore were busily engaged.

The fatal error of metaphysics is the reification or hypostatisation and substantiation of names. Gold is supposed to be an essence which is in possession of many properties. The properties are knowable, but the essence itself remains unknown. The error is obvious enough: the properties of gold are, in truth, qualities; gold is the sum-total of all its qualities, and we know what gold is as soon as we know all the qualities of gold.

Among the philosophers of the eighteenth century Bishop Berkeley (commonly and, even by Kant, erroneously regarded as a denier of reality) is the only one who reached the proper conclusion that substance does not exist.

While metaphysicians mystified themselves and others with things-in-themselves and with the idea of metaphysical knowledge, the investigators in the various branches of science, nothing daunted, continued in their search for truth, and it became an established

doctrine of the day that science and philosophy were diametrically opposed. The philosopher looked down upon the scientist, whom he ridiculed for imagining himself in possession of a parcel of truth, while in fact his knowledge was a mere illusion. The scientist, on the other hand, smiled at the ingenuous pride of the philosopher whose grandiloquent phrases were either the vagaries of dreamers or trivial truisms concealed in the garb of pompous declamations. Some scientists tried to keep in contact with metaphysics, but others cut themselves loose from it, and Kirchhoff, in order to avoid the mysticism into which the metaphysical conception of knowledge is liable to involve a thinker, replaced in his Mechanics the term "knowledge" by "description," declaring that the object of mechanics is to *describe* with exhaustive thoroughness and the greatest attainable simplicity the motions that take place in nature. Professor Mach, born of the same spirit of modern science, independently of Kirchhoff, spoke of cognition as a mimicry or mental reconstruction of facts—*ein Nachbilden der Thatsachen.*[1]

After science and philosophy had separated, science began to split up into innumerable specialties, and philosophy lost itself more and more in the

[1] See Professor Mach's great work, *The Science of Mechanics*, his *Monist* articles, *passim*, and especially his "Address Delivered Before the General Session of the German Association of Naturalists and Physicians, at Vienna, September, 24, 1894," published at p. 236 of his *Popular Scientific Lectures* (Chicago: The Open Court Pub. Co. 1898, third edition).

labyrinthian woods of metaphysics. The consequence was that the need of a reconciliation was strongly felt, and approaches were made from both sides to reach an amicable *status quo*, in order to keep philosophy sound and to preserve the solidarity of all knowledge in the sciences through the establishment of A PHILOSOPHY OF SCIENCE.

Many a scientist is inclined simply to ignore the pretensions of metaphysics, but that will not do; for there is a truth at the bottom of its vagaries which should not be neglected, and the declaration that the nature of knowledge of any kind, in matters philosophical or scientific, is a description of facts will not be satisfactory until we understand the full importance of this definition. What we need is, first a mutual understanding between philosophers and scientists, and then a reconciliation of their points of view. We need a PHILOSOPHY OF SCIENCE, whose duty it is to prune philosophical speculation, to render science conscious of its aim and methods, to correlate the various branches of investigation, and systematise its most important results in the grand outlines of a scientifically sound world-conception.

THINGS-IN-THEMSELVES.

The proposition that things-in-themselves cannot be known, has often, and perhaps justly, been proclaimed as the central idea of Kant's philosophy.

Kant concludes the first section of his *Transcendentale Elementarlehre* with this "critical admonition":

"That in general nothing which is intuited in space is a thing in itself, and that space is not a form which belongs as a property to things; but that objects are quite unknown to us in themselves, and what we call outward objects are nothing else but mere representations of our sensibility, whose form is space, but whose real correllate, the thing in itself, is not known by means of these representations, nor ever can be." (*Kritik d. r. V.* § 4.)

The term "thing-in-itself" means originally the object as it is, independent of the thinking subject's cognition. For instance: A rainbow appears in the clouds; the rainbow is not a thing-in-itself, but the appearance of a thing-in-itself. The rainbow exists in man's sensibility only. The colors of the spectrum, indeed all colors, the colors of the sky, of the clouds, of trees, of living beings, are sensations only; they are subjective phenomena, they are certain kinds of feelings representing objective realities, but they are not these objective realities themselves. They are perceived in the brain and are projected to a place outside the organism. The rainbow, as it is seen, is not a thing, but it is something seen, it is an appearance only. And this is true of all things seen and heard and perceived by any one of the senses. The sense-images are localised in space, they are projected outside to a spot where the combined experience of the senses has taught a sentient being to expect them. But all the objects of the objective

world as they are perceived are and remain subjective sense-perceptions. The world of our senses around us is woven of our sensations. It is mere appearance. This is not a question concerning which there is any doubt, this is simply a matter of fact. But the question arises, "Can we know things as they are independent of sensation? Can we know things-in-themselves?"

The physicist and every scientist is engaged with the problem, What are natural phenomena independent of sensation? Light is a sensation of vision, but what is the objective process that takes place when a human eye perceives light? The physicist answers this problem by eliminating in his mind the sense-element and by describing the facts of the process in terms of matter and motion. His answer is that light, objectively considered, is a certain vibration of the ether. If we can rely upon physical science, the thing-in-itself of a rainbow would be a certain refraction of ether-waves. These vibrations of the ether-waves are transmitted from the sun, and being broken in the falling raindrops take place independent of cognition; they are real whether we look at them or not.

The ultimate aim of science is a description of the natural phenomena not in terms of sense-elements, but in terms of form. That feature of a thing which we call its matter, constitutes its reality, but the form of a thing, of a motion, or of a process makes the thing that which it is; every act of causation is a

change of form, and the forms of things are determined with the assistance of the operations of purely formal thought, i. e., through measuring or counting. Such is science, not only as it ought to be, but also as it actually is. All our scientists, each one in his field, are consciously or unconsciously working out a solution of this problem. And a solution of this problem means, in our conception, the objective cognition of the world—i. e., a description of the natural processes as they are independent of sensibility.

Kant knew very well that a description of things and of natural processes in terms of form was possible. He clung, nevertheless, to the proposition that things-in-themselves are unknowable. And why? A description of things and of natural processes in terms of form was in his opinion not as yet a description of things-in-themselves, for—and here we are confronted with the original idea and the fundamental error of Kantian thought—Kant did not consider the forms of things as an objective quality of theirs, he maintained that the formal element is purely mental and merely subjective. The thinking mind, he declared, attributes them to the object. Space and time, the pure forms of existence, together with all other forms, such as causation, are, according to Kant, not qualities of the objective world, but of the thinking subject. The thinking subject cannot help viewing the world in the form of its own cognition, it transfers these forms to the objects. Therefore the thing-in-itself according

to Kant would not be represented in a description of the thing purely in terms of form; the thing-in-itself would mean the thing as it would be, independent of time and space.

Let us here point out a distinction between the thing-in-itself and noumenon.[1] Noumenon means "a thing of thought." The noumenal world is the world of thoughts in a thinking being's mind. The noumenon must not be identified with the thing-in-itself. The two terms are often confounded, but they have to be distinguished. The idea of reflected ether-vibrations is a noumenon, the objective process is the thing, i. e., an objective reality, and in so far as they are a reality, considered as being independent of sensation, we may call them "a thing-in-itself."

When Kant denies the objectivity of time and space, he must, implicitly, also deny the objectivity of things. The pictorial world of our sense-perception is subjective, it is built up of sensations, it is not objective; and the world of thought is the attempt to reduce the subjective world of sense-imagery to terms of objective validity, i. e., to terms of form,—form being an objective quality of things. But this world of thought is, according to Kant, not only mental, but purely mental; it is purely noumenal. In other words, noumena do not represent things independent of cog-

1 Pronounce *No-oô-me-non*, not nóomenon as some dictionaries have it. The Greek original (the passive participle neuter form of νοεῖν to think) is νοούμενον, the *u* in its German and English transcriptions represents the Greek *ου*.

nition, they represent things as our mind thinks them. The sensory world is mere appearance, it is a subjective phenomenon, but the world of thought, says Kant, is not less subjective; it is a world of thought which describes things in terms of purely mental properties and not in properties of the things themselves. This is tantamount to the proposition, that things-in-themselves cannot be known.

The term "thing-in-itself," in the sense of a thing as it is independent of sensibility, would better be called "the objective thing," and we shall so call it when we wish to distinguish it from Kant's thing-in-itself. The objective thing is the thing, not expressed in terms of subjective elements, such as feelings or sensibility, but in terms of objective elements, i. e., in terms of form. That a description of things in terms of forms is possible has never been denied either by Kant or by any Kantian; but they deny that these descriptions are anything more than mere noumena; Kant and the orthodox Kantians deny that they represent the things as they are in themselves. Thus the term "thing-in-itself" in the Kantian sense comes to mean the thing as it is independent of space and time.

THE OBJECT AND ITS QUALITIES.

That every noumenon is a mental sign is a matter of course; the noumenal world is ideal. But we maintain that these mental signs represent real qualities of

the objective world; they have a meaning; the things represented by them are actual features of reality. Kant does not acknowledge this. To him the noumenal world is purely noumenal. To Kant there is no space outside the space-conception, and so he declares that space is ideal; it is not an objective quality of things. However, we maintain that our space-conception describes, i. e., depicts or represents, space our space-conception is ideal, yet space is not ideal but real; it is an objective quality of the world.

Kant's view is dualistic, or at least necessarily leads to dualism, and it appears to rest on an unpronounced dualistic assumption. Kant treats "the subject" as something quite distinct and separate from "the object." If he had borne in mind that the subject is always at the same time an object, he would have treated both subject as well as object as mere abstractions of one and the same reality. Resting upon this erroneous presupposition, Kant's most consequential mistake, in our opinion, was his conception of what he called "the ideality of time and space." If time and space were purely ideal, purely mental, purely subjective, then indeed, the things as they are would forever remain unknown to us; then indeed the thinking mind would be as if shut up within a hollow globe out of which it could never escape; then indeed the world would be divided into two parts, the objective world and the subjective world; and the gap between both could never be bridged over. The think-

ing mind would have within itself a noumenal world built upon the subjective elements of sense-impressions. This subjective world would possess no objective value, it would not describe realities, and the objective world would thus be unknowable, inscrutable, and mystical.

The idea of a thing-in-itself found further support in a mistaken conception of the unity of certain things, especially of organisms. The unity of a combination of parts is not merely the sum of the parts, it consists in their peculiar combination which makes an harmonious co-operation possible. This unity is an additional element; it is an entirely new creation which exhibits features not contained in any of its parts. There is no latent watch contained in a heap of little wheels and cogs; the watch is created through the combination of these wheels and cogs. The unity of thing is its form, consisting in a special arrangement of its parts; and this form although not material is nevertheless real.

The materialistic conception overlooks or underrates the importance of form; but the spiritualist and also the transcendentalist materialise it as some spiritual substance, or essence, as an entity or independent existence. They are in this way as much materialistic as the materialist.

To elucidate the problem "What are things-in-themselves?" let us ask the question: What is a melody-in-itself? The question has sense when we un-

derstand by it, What are those new qualities which appear through a certain combination of sounds? Those qualities are not nothing, they are something new and quite peculiar. We call one of them rhythm, another one is the fixed succession of notes of a different pitch. The qualities of a melody as a whole are not qualities of its separate parts; the melody is something new which originates through their combination; yet therefore the melody is not a thing-in itself; and if we understand by "thing-in-itself" the objective process of its rehearsal, then, certainly, no melody is independent of time and space.

Take another illustration. We might just as well speak of a watch in itself, meaning thereby that peculiar unity of the combination of its parts which makes of them a watch. But if we thus speak of "the watch in itself," we must be aware that this idea has not somewhere in a transcendental fairy-land an independent existence above space and time, and outside of its parts. The unity of a certain interacting group of parts is, on the one hand, not merely an addition made by the thinking subject, it is not purely noumenal, it is real and objective. The unity, if complete, is a new factor which has an efficacy of its own. On the other hand it is not a thing-in-itself, independent of its parts; it is the product of the relations in which its parts affect one another.

Is not perhaps the basis of these vagaries a mistaken conception of language? We call a certain

sensory picture a tree and we say, the tree has roots, a stem, branches, leaves, and fruits. Autumn sets in and the wind shakes the leaves off the branches. Now we speak of a leafless tree. We cut the tree down and we speak of a rootless tree. We burn the trunk and the branches, and the tree as a phenomenon is gone, all its properties are taken away. What remains? The tree-in-itself is left, but the tree-in-itself does not exist. If all the property of a person is taken from him, the person himself is still left. The properties of a tree, however, are not properties in the same sense; they are qualities. If all the qualities and parts of a tree are gone, if only the tree-in-itself is left—then there is left nothing but the empty word tree, the idea of a tree.

KANT'S VIEW OF SPACE AND TIME.

Let us briefly consider the ground upon which Kant bases his view of the ideality of space and time. Kant asks:

"What then are time and space? Are they real existences? Or are they merely relations or determinations of things, such however as would equally belong to these things-in-themselves, though they should never become objects of intuition; or *are they such as belong only to the form of intuition, and consequently to the subjective constitution of the mind*, without which these predicates of time and space could not be attached to any object?"[1] (*Kritik der reinen Vernunft*, § 2; *Meiklejohn*, p. 31.)

[1] Italics are ours. Kant affirms the italicised question.

We should say, to state our opinion briefly, that space and time are not "real existences," i. e. they are not concrete objects, but they are real nevertheless; they are not material things, not thingish realities, yet they are objective qualities of things. They are the forms of things and processes, and belong to the things whether they become objects of cognition or not. In this sense, they actually belong to the objects themselves, viz. to the objective things, such as they are independent of cognition.

Kant argues that space and time are not conceptions derived from outward experience; they have not been abstracted from sense-impressions. They are necessary representations *a priori*, they are not discursive ideas or generalisations, for there is but one space and one time, space being represented as infinite and time as eternal.

From these arguments Kant draws the conclusions that space and time do not represent qualities of an object but that they are the form of all sensory phenomena, space being the form of the external, time of the internal sense, whatever that may mean. In other words, space and time belong to the subjective condition of the sensibility and not to the objective world.

We answer that our conceptions of space and time are after all derived from experience. Space and time are abstractions. We grant that there is no time in itself and no space in itself. Space and time are not directly derived from outward experience, nor are they

derived from the sense-elements of experience. Inner experience, i. e. reflection (or thought) to the exclusion of sense-impression, the experimenting with pure forms, will lead to the construction of the concepts of space as well as of time. Space and time, magnitudes and numbers, having been constructed in the mind of a thinking subject are applied to practical experience. When counting three trees we do not abstract the number "three" from the three trees, but having constructed the system of numbers, we apply it to objects around us.

Says Kant:

"We never can imagine or make a representation to ourselves of the non-existence of space, though we may easily enough think that no objects are found in it. It must therefore be considered as the condition of the possibility of phenomena and by no means as a determination dependent upon them and is a representation *a priori*, which necessarily supplies the basis for external phenomena."

Space being the generalised concept of extended form, and time that of motion without reference to any contents, it will, so long as we think or move or have our being, naturally prove impossible to think the non-existence of space and time. Thinking is an act, it is a process; and any act, any process, any event, is a reality which implies or presupposes the existence of the forms of reality. We can think of matter without reference to form, i. e. we can have the abstract idea of matter; but we cannot think that there is any mat-

ter void of form. This by no means proves that form has nothing to do with matter. On the contrary, it proves that form and matter are inseparable. The form of existence need not therefore be called "the basis" of existence, it is simply one universal feature of existence. And the form of existence being bound up with existence itself, it is necessary that any thinking existence, in so far as it is real, in so far as it is at the same time an object and part of the objective world, should also be in possession of the conditions to evolve the idea of form out of itself through inner experience.

This inner experience of experimenting with pure forms is different from outer experience, but it is also a kind of experience. It is not a purely subjective process; it is a subjective process to the thinking subject, which to other subjects, however, would appear as an objective process. The laws of pure form as stated in the sciences of purely formal thought, are not merely subjective; they possess objective validity. It is true and from our standpoint a matter of course that the laws of form are *a priori*, which means, they hold good for any pure form.

Modern positivism, such as we defend it, is monistic. We consider the entire world as one great whole and do not forget that all noumenal representations of certain features of the world, of matter, mind, form, even of things and our own souls included, are mere abstractions. Reality itself remains undivided

and indivisible. Abstract concepts are mental symbols invented to represent certain features of reality. But although we can in our mind separate these features and distinguish them from other features, in the world of reality they cannot be cut out and separated from the rest or thought of as things-in-themselves. Granting the oneness of reality which dawns upon us instinctively before consciousness is fully matured, we are inevitably led to the conception that there may be many space-conceptions, yet there is but one form of reality, which implies that there is but one space and one time.

FORM A FEATURE OF REALITY.

Kant says, and in this we agree with Kant, that "all thought must directly by means of certain signs relate ultimately to *Anschauungen*." The word *Anschauung* (literally: "onlooking," generally translated by "intuition") means the immediate presence of sense-perception. Says Kant:

"The effect of an object upon our faculty of representation is called sensation, and that intuition (*Anschauung*) which refers to an object by means of sensation is called empirical intuition."

For instance, I see a rose: the image of the rose which I see is the appearance or the phenomenon. Kant continues:

"That which in the phenomenon corresponds to the sensation I term its *matter*, but that which effects that the contents of the phenomenon can be arranged under certain relations, I call its *form*."

In other words matter is that which affects the senses and form is to be expressed in relations. The difference between the formal and the material is obvious. The formal is of great importance, nay, it is of paramount importance, but it is neither anything apart from the material nor is it a substance. Both concepts are disparate, though derived by mental abstraction from the same reality.

We fully agree with Kant when he continues:

"That in which our sensations are merely arranged, and by which they are susceptible of assuming a certain form, cannot be itself sensation."

But we do not agree with Kant when from this proposition he derives the following conclusion:

"It is, then, the *matter* of all phenomena that is given to us *a posteriori*; the *form* must lie ready *a priori* for them in the mind, and consequently can be regarded separately from all sensation."

Here lies the great fallacy of Kant, which rests upon an erroneous statement and an actual distortion of fact. The phenomenon of a rose which I see before me is not merely sensory, but also formal. The phenomenon, i. e. the image of the rose (*die Anschauung*) is a sensation of a special form. The term sensation as it is generally used implies its having a special form. Accordingly the form does not, at least not from the beginning, lie ready *a priori* in the mind; forms are given together with the sensation.

Kant speaks of "that which is annexed to percep-

tion by the conceptions of understanding," as if our understanding added the formal out of the mind to the sensory elements given by experience. What is the mind? The mind is a product of the world; it is a system of symbols representing the things of the world and their relations including such possible relations as are worthy of aspiring for. In short, the mind consists of ideas and ideals.[1]

It has often been said that the mind is the creator of the sensory and noumenal world. This is incorrectly expressed, for mind *is* the sensory and noumenal world itself. The sense-pictures, the thought-symbols, and the ideals of a man are actual parts of this mind. They are not products but constituents of his mind. Their organised totality is his mind itself. The activity which takes place in a mind, i. e. the combining, the separating, and recombining of memories, thoughts, and ideals are the actual realities, and if we speak of a man's understanding, or reason, or any other so-called faculty, we have to deal with abstractions. The activity of mentally separating form and matter might be called by the general term understanding. However the faculty of understanding is not a distinct mental organ, it consists in the several acts of understanding, and the word understanding is a mental symbol representing them all together as if they were one thing.

[1] The problem of "The Origin of the Mind" having been discussed elsewhere, need not concern us here. See *The Soul of Man*, pp. 23–46.

And certainly these acts of understanding as little import the formal into the world of sensation as the miner carries the metals into the mines. The formal, the relational, or the *a priori*, is first extracted out of the data of experience not otherwise than iron is gained out of the ores. The ore is not iron but it contains iron, the phenomenon of a rose is not purely a sense-impression, it is a sense-impression of a certain form. We are aware of the fact that mind is an entirely new creation different from the non-mental world, yet at the same time we maintain that the elements from which mind develops are the same as the elements of the non-mental world. Nature furnishes the entire raw material and whatever new creation the product of a new development is, nothing can be added to the raw material, of which the formal is the most indispensable part.

The raw material of sensory phenomena as soon as it is worked out, and also the activity of working it out are called mind. Mind accordingly originates with the appearance of sentient substance as the organisation of feelings and the memories of feelings—these memories being conditioned through the preservation of the form of sentient substance. Mind is not something different from the world but must be considered as its product and highest efflorescence. Mind is made of the same substance as the universe and the mind-forms are a reflection of the forms of objective existence.

As soon as a system of forms has developed in a sentient being, thus constituting its mind, this system can be referred to the objective forms of things. In this sense we can say with Kant, that the understanding imports form into phenomena; and this importation is a re-importation. It is an essential element of cognition, that we systematise form and then refer the objectively formal to the subjective system of formal thought.

THINGS AND RELATIONS.

The proposition that things-in-themselves are unknowable finds a strong argument in the statement that we know relations only and that all knowledge is relative. Undoubtedly this is true; but what is a relation?

When I once proposed this question, I was answered:

"A relation is the connection between two things; it is that something in which the one stands to the other, in short, it is the betwixtness of things."

This is exactly what a relation is not. From such a definition of relation agnosticism will necessarily follow. It is a misstatement of the case, and when we come to follow out the idea, we shall be led into inextricable contradictions, and unless we revise the whole argument, we shall have to confess that we are at our wits' end.

The question, What is relation? was one of the

issues between the two great mediæval schools of philosophy, the Nominalists and the Realists.[1] The Nominalists answered: "A relation is a mere product of the mind," while the Realists declared that "a relation without which the thing cannot be, is in the thing."

Both schools relied upon Aristotle's authority. Aristotle had declared that matter is mere possibility of existence (it is δυνάμει ὄν) and form is that which makes it real, the formal is the real, form is existence or being (οὐσία). The metal of a statue, Aristotle says, is its matter, the idea of the statue is its form, both together make the real statue. The metal having had another form before, did not exist with the inherent purpose of being this metal of the statue. The metal is the mere potentiality of becoming a statue.[2] Hence, says Aristotle, not the matter but the form constitutes the reality of the statue, the form is that which is real, or that which makes actual, ἐνεργείᾳ ὄν, it is the being in completeness or actuality, ἐντελεχείᾳ ὄν, i. e. that which makes a thing exist in its purpose (ἐν τέλει ἔχειν). If the formal alone is and makes real, relations must be real. This is in favor of the Realists.

Yet Aristotle's philosophy is not in every respect

[1] It is scarcely necessary to mention that mediæval Realism is different from modern Realism.

[2] Aristotle's idea of matter being potential existence is a fiction. Fictions of that kind are useful for certain purposes, but we must not forget that they are fictions. We might just as well introduce any other system of fictions. For instance we might with certainly not less propriety look upon the idea in the mind of an artist as potential reality while its appearance in a material shape is conceived to produce actual reality.

clearly worked out. In fact there are two Aristotles, the one being a Platonist, the other a naturalist, the one believing in universals, the other investigating concrete things and taking individuals as real beings. But both Aristotles and with them both parties of the schoolmen had no clear conception of the nature of ideas, what they are, and what they purport, and how we can discriminate between their subjective and objective elements. Ideas have a meaning. Is their meaning purely mental or has it an objective value? We say that it has.

The same Aristotle who considered the formal as that which makes real, denied the objective existence of relations. He said that such qualities as greater, or smaller, double or half, indeed all relations (the πρός τι of things) did not belong to the things, but were added to them by the thinking subject. *Ergo* relations are mere products of the mind, they have no objective value. This was in favor of the Nominalists.

Now it is true that some relations are purely mental in so far as the comparison upon which they rest is purely imaginary. An answer to the question, Who was the greater, Alexander or Cæsar? depends upon the standard of measurement which we create for the special purpose. Some such relations have no objective value, they are not facts but a play of imagination dependent on the recognition of the standard of measurement. But how is it, if we express the

relation between the gravity of a stone and the whole mass of the earth as it manifests itself in the stone's fall? Is that also a mere product of the mind? Certainly Newton's laws describing gravitation in exact and mathematical formulas are a product of the mind, but this product of the mind has an objective value, it has a meaning, it describes facts, and these facts are certain relations between certain things.

* * *

The fault of the modern misconception of relativity lies in the assumption that the two or more things are considered as things-in-themselves. We are apt to consider the gravity of two masses, of a stone and of the earth, as a relation between two independent things. Here is the stone and there is the earth and the relation is considered as some third item, being the connection in which the one stands to the other.

In reality there are not two things and, in addition to them, a betweenness of the two things. The world is not a sum of things, not even a system of things, but a whole indivisible entirety and what we call things are abstractions which serve special purposes in the household of cognition. All things consist, as it were, of innumerable relations to all other things. When we abstract one special process which takes place in the province of what we are wont to call *two* things, we have to deal with a relation.

There are no relations-in-themselves and there are no things-in-themselves. Relations describe certain

features of reality obtaining between what we call two or more things, and in this description all other features of which the real things consist are purposely omitted.

There is no quality of things that is not at the same time a quality of relation. Every quality of a thing characterises it under a certain condition; it appears as an effect upon something and thus it is actual as a relation. Cognition analyses things into bundles of relations and all these relations together make up the things.

The modern idea that we can know relations only and that there are things-in-themselves which are unknowable is an old error inherited from mediæval scholasticism, and its roots can be traced back to the philosophy of Aristotle. The difficulty disappears as soon as we consider the whole world (ourselves included) as an interacting whole, and that the conceptions "things" and "relations" have been invented for describing certain of its parts and certain of its interactions or interconnections.

If we push the idea of things in themselves to the ultimate extreme we arrive at the atomistic conception of the universe. *Atoms are the things in themselves reduced to the point system.* If we consider the world as a heap of innumerable atoms, we are at a loss how to explain the interaction among these atoms. The atomist universalises the substance-abstraction and will be disappointed afterwards not to

be able to deduce from his universalisation other qualities which are found in reality, such as the relations of things, their interconnections, their spontaneity of motion, the life of organised beings, and the mind of thinking creatures.

Ideas are symbols and symbols have a meaning. The whole realm of mental representations may be viewed in their symbolism or in their significance. Considering their symbolism, ideas of things as well as of relations are products of the mind; considering their meaning, ideas represent realities; in other words: their contents or that which they signify is real.

It appears that neither Nominalism nor Realism is right; yet if we stretch them only a little, if we are allowed to interpret them in the light of a monistic world-conception, both are right. They cease to be contradictory and become complementary. Universals are real, say the Realists, i. e. the forms and relations of things are actualities. Universals are names, say the Nominalists, i. e. the relations and forms in which we describe the world are mental symbols.

The Realists had the misfortune to defeat the Nominalists entirely, and thus had a chance to insist upon being right in every respect. All opposition having ceased, the errors of Realism grew in extraordinary exuberance. Nominalism in the meantime raised its head in opposition to the recognised authority of the Church as well as the schools, slowly yet

powerfully and irresistibly. The errors and the tyranny of Realism gave strength to the Nominalistic movement which reached its height in Kant's philosophy. The Realists had gone to the extreme of declaring that universals were things, real substances, independent of single and concrete objects, and the Nominalists on the other hand, represented by Kant, went so far as to declare that all relations, time and space included, were *mere* products of the mind.

If the relations are mere products of the mind, all knowledge being a knowledge of relations, knowledge becomes impossible. That last consequence was drawn by Kant and is emphatically insisted upon by agnosticism.

There is but one world-conception that can dispense with these conclusions: it is that view which conceives of the All as a whole; and of knowledge as a description of its parts, qualities, and relations, ever mindful on the one hand that the parts are parts, that qualities and relations are certain features only, not entire realities, or isolated entities, and that the symbols thereof frequently overlap each other; on the other hand, that there is nothing absolute.[1]

There are no things-in-themselves, but there are forms-in-themselves; or, in other words, the proper sense in which the term "thing-in-itself" can be used

[1] The term "absolute" is for that reason neither meaningless nor redundant. It denotes a certain method of viewing things, but is not an objective quality of things.

denotes that bond of union constituted by all relational features which makes the thing what it is.

The relativity of knowledge, whether we conceive of it as expressing the interdependence of the object and the subject in general, or as an appreciation of the fact that all knowledge gives and can give information of relations only, does not lead to the conclusion that knowledge is impossible. Relativity is a fundamental feature of knowledge, and we shall understand that it must be so if we consider that reality itself is a great system of relations.

The interconnection of all things with all things appears to be so complete, that if we intended to explain or understand one single fact fully and exhaustively in all its relations, past, present, and future, we should be obliged to give a complete description of the universe. Stretching the point a little, Tennyson says:

> "Flower in the crannied wall,
> I pluck you out of the crannies;—
> Hold you here, root and all, in my hand,
> Little flower.—but if I could understand
> What you are, root and all, and all in all,
> I should know what God and man is."

We might address in the same way anything else, an atom of hydrogen, a grain of sand as well as the sun, the action of a tiny speck of irritable protoplasm as well as the soul of man. But of course Tennyson's

poem must be taken *cum grano salis*. There is a reverse to the medal which we shall show further on.[1]

THE IDEAL AND THE SUBJECTIVE.

When we accuse Kant of dualism,[2] we do not mean to say that he is a confessed dualist. On the contrary, he becomes dualistic by trying to attain a pure monism. He discovers that the formal laws of the world exist *a priori* in the mind, and so he concludes that the mind dictates them to the world. His argument is based upon the principle of monism; he declares that they cannot be indigenous with both, the subjective mind and the objective world; and not going to the bottom of the nature of the *a priori*, his theory leads to conclusions which imply dualism.

Kant's mistake is strange, yet it is based upon a very important consideration. Kant was the first to understand the sweeping significance of form and of formal thought. He defines form correctly as that feature which constitutes relations, and when awakened from his dogmatic slumber by Hume's scepticism, he recognised at once that causation, being the concatenation of cause and effect, belongs to the category of formal thought, and thus it is in the same predicament as mathematics and all the other concepts of pure reason. If we doubt causation, we must also doubt mathematics. If mathematics is well established, causation too is well established.

[1] See pages 57-58.

[2] Cf. p. 12.

Now Kant regarded all cognitions of pure reason as indubitable, for they are *a priori*, and *a priori* truths are necessary and universal. Thus there is no need of doubting the reliability of causation, and Hume's scepticism is forever overcome.

And yet Kant's solution of the difficulty as offered in his *Critique of Pure Reason* is almost as bad as, if not worse than, Hume's negativism, for Kant, after having proved all formal knowledge to be ideal, by a strange confusion of ideality with subjectivity, insisted upon the mere subjectivity of time, space, logic, and all other purely formal conceptions. It is true, he always speaks of ideality, but he means subjectivity, and thus renders all objective or scientific philosophy illusory. Hence his proposition that things-in-themselves are unknowable.

Sensations, it is true, considered as pure feelings are subjective, but their various forms symbolise the things through contact with which they originate, and thus they have reference to objective realities: their meaning is not subjective but objective. We grant that there is a difference between the objective world, which appears to us as material, and the subjective world, which is sensory, but one feature is common to both, viz., the formal or relational. If the formal were, as Kant claims, purely subjective, the theory that knowledge is impossible would be justified, and agnosticism would be firmly established.

Man's comprehension of facts is, as it were, a

bridge between the subjectivity of his soul and the objectivity of the world in which he lives. Man's knowledge describes the surroundings as the sailor's chart depicts the seas on which he sails. Sense-images and ideas represent the objects of reality and their relations; and the import and practical usefulness of ideas grows according as they approach the ultimate ideal of cognition, which is the comprehension of all difference as a difference of form according to universal formal laws.

Kant distinguishes two sources of knowledge, sensation and pure reason. Sensation in itself is blind, and pure reason in itself is empty. Sensations are incidental and particular, coming to us singly in a haphazard way and without affording any information concerning a necessary connexion. However, the most striking character of pure reason is the intrinsic necessity and universality of its statements; and Kant maintains that from the beginning or *a priori* pure reason lies in the human mind in a state of latency to be roused by sense-experience. Pure reason, formal thought, and mind thus become inseparable and practically identical. Kant argues that, since pure reason with its necessity and universality, including the conceptions of space and time and the categories, is not imported into the thinking subject by sensation, it must be purely subjective or ideal. It is a form of the thinking subject, not of the objective world.

Now, we do not deny the ideality of pure reason.

Our space-conception, our time-conception, our numbers, geometry, logic, and the schemata are ideal; they are systems of pure thought and belong to the realm of ideas; they are mental constructions. Indeed, they are *purely* ideal, for mathematical points, geometrical triangles, pure numbers, and logical categories do not, as such, exist in reality. At the same time they are in Kant's sense of the word "transcendental."[1]

If I want to know the qualities of oxygen I must make experiments and find it out by putting oxygen to different tests; if I want to know what rock-formation the Rocky Mountains are I have to travel or investigate samples of stone thence taken and so forth; but if we want to know the relation of the circle's circumference to its diameter, we must not consult nature but our own mind. We need not go out of doors; experiments or travels would be useless; we can pass by experience,[2] and have merely to draw the picture of a circle on paper, not to measure the two lines on the paper, but to assist our imagination in the mental construction of a circle for comprehending the laws

[1] Kant distinguishes "transcendent" and "transcendental," the former being that which lies beyond the possibility of experience, the latter that which is the condition of experience. The notions of time, space, and any other kind of relation (including causality) are transcendental, but not transcendent. All purely formal ideas are mental tools, for cognition consists in tracing samenesses or differences of form, and science would be impossible without measuring or counting.

[2] This passing by of experience, this neglecting sense-information, is called by Kant transcending experience; which means an appeal to the higher court of the conditions of experience.

of circles in general. We decide all arithmetical, geometrical, logical relations (viz., purely formal conditions) in our own mind by referring to our own purely mental (i. e., ideal) constructions. Number, number-systems, geometrical figures, mathematical space, logical arguments, causality (i. e., our conception of the necessary connection of events), etc., are purely ideal, and since these products of pure reason furnish us the means of a methodical investigation, they are in Kant's terminology transcendental.

Yet while all formal thought is purely ideal and transcendental, it is by no means purely subjective. Kant uses the term ideal in the sense of subjective, but the two terms are not identical. The terms are similar and may sometimes cover the same ground so as to be used as synonyms and to allow a substitution of the one by the other. Nevertheless, they are quite disparate; for instance, the feeling feature of sensations is purely subjective, but it is not ideal.

We define ideal as belonging to, or having reference to, the realm of ideas; subjective as belonging to, or having reference to, the realm of the subject. While the laws of form (including the laws of time and space) are purely ideal constructions, we cannot say that time and space are purely subjective. Form is a quality of objective existence, and all bodies are possessed of definite shapes. Form and matter are inseparably connected, and our first notions of pure forms are abstractions. Time and space, it is true,

are, as Kant argues, inseparably connected with the thinking subject, but (and this is important!) only in so far as the thinking subject is at the same time an object moving about in the objective world as a body of a definite shape and with definite whereabouts. The ideal constructions of mathematics, arithmetic, and logic, are, as we have seen, built of materials quarried from the mines of objective existence, the knowledge of which has been acquired by experience. They convey the most reliable information concerning certain universal and therefore very important features of objects and become thus the tools of cognition. We must have them ready *before* we can begin a systematical investigation of objects, and in this sense alone they are *a priori*.

The necessity and universality of a statement, which are to Kant the most important evidence of subjectivity (or, as he says, "ideality"), indicate, in our conception, objectivity. The most elementary particle of pure form (if we be permitted to speak of form as if it could exist in parts like a material substance) contains *in nuce* all the conditions of its complex potentialities. Given the progression by steps, and we have the elements from which by various manipulations the whole science of arithmetic with its most involved calculations can be derived. Given the possibility of motion in all directions, and we can by merely remaining consistent build up geometry in all its branches with its wonderful harmony and in-

trinsic necessity.[1] The same process performed in the same way produces the same result, and this is the key to the perplexing mystery that, by the help of an ideal construction, we gain information about the nature of objects. The comet does not obey the subjective theories of the astronomer's mathematics, but the astronomer's mathematics is a mental construction from purely formal elements which are universal features of objective existence, applicable to all the analogous cases which may take place in any part of the universe. The model which we construct corresponds to the reality, so that the former affords information concerning the latter. Our purely formal systems are ideal, but they describe features of objective reality. They are transcendental (i. e., indispensable conditions of experience) only because they describe objective features.

The formulations of the formal laws, as we have them in mathematics, logic, and other formal sciences are, it is true, purely ideal, they are mental constructions, but the formal laws themselves are for that reason not merely subjective; they are objective and constitute the most important feature of reality, which is the immanent and all-pervading deity whose presence is so intrinsic that we are unable to think any possible kind of existence without it; and the more clearly this feature of reality is mirrored in a sentient

[1] With different assumptions we may build up different geometries. But here is not the place to discuss the theories of our modern hypermathematicians.

being where it is called reason, the higher that being ranges in the scale of evolution, the more truly it can be said to be an image of God, and the more far-reaching will be the sway of its dominion over the forces of nature. In a word, manhood is the incarnation of the formal law in its application to the problems and duties of practical life.

No better evidence can be given in favor of the philosophy of science than the truth that there are not various reasons different in kind. Neither can reason ever be self-contradictory, but is and must always remain one and the same, unfailing in its consistency and harmonious unity.

The uniqueness of reason does not indicate its latency in the subject as subject, but its latency in existence as existence. There is no existence bare of that formal element which by the same actions would not develop always the same result, for it is this sameness alone that constitutes the intrinsic necessity and universality of all formal laws of thought, called reason. This formal feature of existence, which is at the bottom of all natural law by making the same conditions produce the same results, is the source of the cosmic order; it is Lao-tze's *Tao*; the Amitâbha of the Buddhists; the Adrishṭa of the Brahmans; the Christian Logos that was in the beginning and has become flesh in the Son of Man. If anything is supernatural, it alone is worthy of the name, for it is above this real world of ours in so far as it is a condition

that applies to any possible world. If there is anything not purely subjective, but objective, universal, and an indelible feature of reality, it is the eternal norm of reason, the intrinsically necessary presence of law in any imaginable kind of existence.[1]

THE ONENESS OF SUBJECTIVITY AND OBJECTIVITY.

The world is not rigid being but activity, not absolute existence but a system of changing relations, not an abstract *Sein* but a concrete *Wirklichkeit*—a constant working of cause and effect. There is a duality in this, but no dualism, for the *Wirklichkeit* is one and undivided. We have two aspects of one and and the same reality.[2]

Every relation admits of two standpoints, just as does the line *AB*, which may serve to represent a certain and definite relation, is determinable from both ends, *A* as well as *B*. Let us call *A* the subject and *B* the object. Neither *A* nor *B* is a reality, a whole complete *Wirklichkeit*. A thing in order to be real must be active, it must work, it must stand in relation to something else. *A* is a mere mathematical point, but *AB* representing a process does something, it per-

[1] Kant's most important work on the question of ideality is his *Prolegomena* which have been published by the author in an English translation and with an elucidation of his own standpoint.

[2] The German word *Wirklichkeit* is very expressive. It might be translated into English by "workhood," a system that works, viz., a state of effectiveness. We must bear in mind that the German *wirken* (to work) is related to *Wirkung* (effect) and implies the effectuality of causation.

forms work, it is real. A thing-in-itself, if it could exist at all, would be tantamount to non-existence, it would represent a *Sein* without being *Wirklichkeit*. When bearing this in mind, it appears natural that the oneness of existence, representable in such relations as that of $AB = -BA$ will admit of two standpoints, BA representing subjectivity, and AB representing objectivity. We can consider the relation of the world at large to one special point (which latter may in its turn stand for a whole system of relations), or *vice versa* the relation of this point to the world at large. The former standpoint is that of the microcosm, or the soul, the latter that of the macrocosm or the universe; the former results in awareness, the latter appears as matter in motion; the former is subjectivity, the latter objectivity.

Reality must not be conceived of as being a compound of the elements of feeling and of motion, of subjectivity and objectivity. Atoms, or whatever the ultimate constituents may be called, do not contain one-half the potentiality of sentience while the other half is freighted with energy. Reality is one throughout; but, being throughout resolvable into relations, it will as a matter of course have two sides. What these two sides are like can be known through experience only, and experience teaches that under certain conditions the subjective side develops into feeling and consciousness, while the objective side is represented in the feeling of conscious beings as motions.

We have, accordingly, the actuality of experience with two aspects, the domain of subjectivity, or feeling, i. e., states of awareness, or consciousness, the relation *AB*, and the objective world, which represents itself as matter in motion, the relation *BA*.

This view explains the duality of our conception of psycho-physical facts, but it is certainly not dualism. The duality belongs to our mode of thinking in abstractions, not to the facts themselves. The facts can only be thought of as being one and undivided, and no conception can stand that is not monistic.

The world around us appears to our senses as matter moving in space, but the world in us, our soul, consists of feelings or states of awareness which rise from sensations of all kinds to the higher spheres of ideas and abstract thought, arousing in us impulses and volitions of all degrees and conscious lucidity. Anything perceived in the outside world of matter moving in space is called "object," the inside world of feelings is called "subject," and we observe at once that our own being appears in our own perception as a part of the objective world. We are soul, but we appear to ourselves and to other sentient beings as a body moving about in space.

The channels of our notions concerning the world of objects are our senses, and comparative physiology teaches that they have developed by a gradual adaptation of an undifferentiated sentiency to the various actions by which the skin of organised beings is af-

fected. The various contacts produce various disturbances in sentient matter and each kind of disturbance in the objective body, if strong enough to become conscious, is subjectively felt as an analogous kind of feeling, touch, taste, smell, sight, and hearing.

Here the theory suggests itself that each form of objectivity is endowed with an analogous subjectivity, so that all the bodies of the same or similar principles are possessed of the same or similar souls. The evidence of this monistic conception is so overwhelming that in practical life all living beings accept the theory unconsciously and endow all bodies which in their actions exhibit purpose with sentient souls according to their various organisations.

We believe that other human beings think as we do; and we attribute sentience to the whole animal world. We begin to draw the line at plants and deem the mineral world bare of feeling. However, we cannot without falling into inconsistency escape the conclusion that other objective existences too, those which appear inert and which by scientists are classified under the head of inorganic nature, possess a proportionate (albeit very low) degree of subjectivity.

The material of the soul-endowed world of organised life is the same as that of the inorganic world; and the latter is the inexhaustible reservoir for the sustenance of the former. Life increases by spontaneous growth under still unknown conditions by transforming inanimate nature into living structures.

The carbon dioxide of the air, the water of the soil, and other elements form the starch in the wheat; the wheat is baked into bread, and bread sustains the life of man. Thus the particles of inorganic substances are transformed into organised beings that feel and think and act. A molecule of oxygen that is obviously without a soul is now inhaled with the barren air into the lungs of a man and may soon become an integral part of the brain process in which some great idea of far-reaching consequences finds its incarnation.

The lowest kind of subjectivity which must be supposed to be present in the gravitating stone or in the chemical action of the elements is, so far as we can judge, not sentient, but contains in an unorganised state the elements of sentiency; and thus we believe that inorganic nature, although it does not feel, is yet endowed with the potentiality of feeling.

We conceive the world as an immeasurably great system of interactions, and say that every action is subjectively a feeling or an element of feeling and objectively a motion; an idea which I think is subjectively a state of awareness and objectively a brain-motion. The idea itself belongs to the realm of pure form. The feeling and the motion are the actualisation of the idea and represent two aspects of one and the same fact.

Subjectivity and objectivity are terms that express relations and not things-in-themselves. There are, however, philosophers who show great grief unless

either the subjectivity of being, or the objectivity of being, or the unities in which things or personalities are gathered up, are considered as things-in-themselves. All those features of reality which appear to their conception unexplainable, such as the relations that obtain among things and especially the thoughts of thinking beings, are supposed to be the effects of some transcendental entity, of a thing-in-itself. And if a philosophy denies the existence of transcendentalistic thought-entities or of any such things-in-themselves, which serve to them as cement to combine the *disjecta membra* of their world-conception, it is generally declared to lead straight on to nihilism—not because the world itself but because their world-system would thereby be annihilated.

All things that exist, if considered as separate things, will pass away; but if considered as parts of the all-existence of reality, they are eternal. In fact things are not separate things, in the sense of isolated, absolute, or abstract beings, although we may speak of them as such for our ephemeral purposes. All things that exist, the human soul included, are and will remain parts of the One and All.

This destroys the individuality both of things and of the soul as little as a brick ceases to be a brick because it serves its part in the building of a dome. The soul of a man, if his life be well spent, is not annihilated in death but has been incorporated as a living factor into the grander life of humanity. It continues

to live and marches on in the general progress of the race.

We are parts of a great whole now, and we shall remain parts of the same great whole forever. We have never been and shall never be transcendental selfhoods or metaphysical egos, or any kind of things-in-themselves. Our personality is real life, it is actual being. As such it is bound up in the universal life of the One and All and no particle of it will be lost. We need not fear death, for the air we breathe is immortality.

THE REALITY OF THE OBJECTIVE WORLD.

There are idealists, so called (e. g., Schopenhauer), who look upon the objective world as purely ideal and some go so far as to deny the reality of the objective world. The question as to the reality of the outer world is a wrongly formulated problem, which to show its futility might be formulated in the words, "Is reality real?" The term "reality" has reference to the condition under which certain sensations originate. The questions as to the uniformity of the laws of reality and as to its attributes, whether it is intrinsically material, or spatial, or spiritual, has nothing directly to do with the problem of the outer world, and is of a more complicated nature. The space-world of our imagination is our method of representing reality; it is that which is meant when a sentient being, by a resistance of some kind, feels its own limitation. There

is neither outerness nor innerness of the world, but the outer and the inner are mere aspects. A fraction of existence, called *A*, if viewed from *A* is called the soul aspect or innerness; if viewed from some other standpoint, say from *B*, it is called body or outerness. The question is not whether reality is real, but, What is the proper definition of reality?

Reality is a synonym of objectivity. In the wider sense of the term, reality is identical with existence and thus we may say that our feelings and ideas are real. But in its original and etymological meaning reality means thingishness, and in this narrower sense it denotes the actuality of objective existence.

Our own existence, so far as we are aware of it, consists of feelings and we call it subjective; but the impacts, which are none of our own doings but are independent of ourselves, represent the objective element. The existence of these impacts is as undubitable as are our feelings, and thus to doubt their reality is as irrational as to doubt our own existence.

The problem as to the reality of the objective world should not be confused with the question whether our mode of representing the objective world is absolutely correct. The fact is, we interpret impacts as effects of objects, and objects are regarded as existing in time and space. Whether our view of corporeality is the proper mode of thinking bodies, whether our space and time conceptions cover all the characteristics of objective space and time, is a ques-

tion of a radically different order which does not admit of an easy answer, because philosophy and science are still engaged in purifying our notions of reality.

Every sensation leaves (as we learn from physiology) in the sentient substance a vestige which is preserved, and which when irritated causes a repetition of the original feeling—a condition which is called memory. When another sensation of the same kind as the first one takes place in the same sentient substance, it enters the memory vestige of its predecessor and revives it. This act is, according to the late Romanes, most appropriately called reception, and the second sensation thus becomes a recept. By reception a new psychic phenomenon is created, for the sameness of the two sensations (be it ever so dimly) begins to be perceived; it becomes a percept which indicates the presence of the conditions of a sensation. This additional element, the representativeness or symbolic nature of sensations, is the life of the soul. Now when we speak of reality we mean facts, viz., sensations, i. e., immediately given facts, or such conditions as by resistance will directly or indirectly produce sensations; and when we speak of something as being "unreal," we mean that the meaning of some psychical symbol, of a sensation, or of an idea, is the product of a fallacy. The sensation of a red object leaves a blue after-image. The red-sensation is real, and the blue-sensation of the after-image is real, for both are immediately given facts. The percept of a

red body is also real, for it means that conditions exist which by contact, viz., through resistance of some kind, will produce certain other sensations. When the red object is touched, the anticipation is verified, or, as we say, "realised"; but when attempts are made to grasp the blue object, our anticipation is deluded and there are no such conditions as were supposed to exist: in brief, the blue object is unreal. Bodily existence, i. e., matter moving in space, or outerness, is the mode by which reality or resistance is represented. Bodily existence, or matter moving in space, accordingly, is not the real world, but reality as it appears to sentiency; it is one aspect only which may be called the outerness of being.

We can deny that things are such as are commonly pictured in our imagination, and that their ultimate constitution is not what is popularly conceived, but to deny the reality of the objective world is a self-contradictory statement. Reality is a synonym of objectivity, and objectivity denotes that quality of our experience which is independent of our own thinking and presents itself as the causative factors of sensation, the combinations of which are pictured as things.[1]

KNOWLEDGE AS DESCRIPTION.

Knowledge is description, and explanations are descriptions which show that some definite and unusual case is due to definite and unusual conditions

[1] See also the author's article "The Nature of Mind and the Meaning of Reality," *Monist*, II., pp. 434–437.

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ism. Sensations are not the things pictured in them, nor do they inform us of the nature of things-in-themselves, they only represent the things so as to show which is which. Representativeness is the characteristic feature of the soul and it is the root from which cognition grows.

Wherever existence has developed into a sentient organism, every impression which is felt as a peculiar sensation leaves a trace, the form of which is preserved in the flux of organised life; and when another impression of the same kind creates another correspondent sensation, it is transmitted to the memory trace of its predecessor which is thereby revived and is felt to be the same. Thus this feeling naturally comes to indicate the presence of the same object, whatever it be, and sensations naturally develop into symbols or signs representing the objects of contact and processes that take place in the objective world.

The simplest kind of cognition is perception; it is the picturing of objects in their analogous forms of feeling, so that their sameness or the similarity of a new sensation with former sensations is perceived, or, as we correctly say, re-cognised. If the picturing is done in words, we call it "description."

Cognition in its primitive form is a reference of the new sensation to an old one, into whose memory-trace it fits; it is the reduction of the unknown to the known; a subsumption of the unfamiliar under a class of former experiences which are familiar. The characteristic feature of "mind" consists in this that the objects of the world are mirrored in sentient images. The word idea means "picture."

Explanation is a more complex kind of description. It is a making plain, viz., a simplification, a description laying bare intricate complications, so that the changes of a process can be traced in all their details.[1]

The main method of explaining natural events is by tracing in them the concatenation of cause and effect.

Natural science has found it convenient of late to express the causal law as a preservation of matter and energy. The law of the preservation of matter

[1] There are two views as to the nature of explanation which we may call the metaphysical and the scientific, or the dualistic and the monistic views. Compare the chapter on Explanation in *The Monist*, Vol. III, No. 4, p. 585 et seq. Compare also Professor Boltzmann's articles on "The Recent Development of Method in Theoretical Physics," in *The Monist*, Vol. XI., No. 2, pp. 226–257; and "On the Necessity of Atomic Theories in Physics," in *The Monist*, Vol. XII., No. 1, pp. 65–97.

and energy is, closely considered and in spite of its formulation in a positive assertion, a negative statement: it means that matter and energy are neither increased nor diminished; and its positive counter-formula would be: "all change is purely change of form; it is not a change of the innermost nature of reality; or, briefly, causation is transformation." The terms, "matter" and "energy," are abstractions which denote two general qualities, the identity of which can be traced in the various transformations of all phenomena; they represent the universal features of that which is real, not entities, not substances in the sense of independent existences, not things-in-themselves. We have to add that matter in this connection is intended to mean mass, for the law of the preservation of matter does not preclude the production of matter from ether by condensation, or any other procreation of the material universe from ether, or perhaps even of ether from a more rarefied world-substance—in brief, of sense-perceptible reality from what we might call potential reality.

A description of two or several different kinds of phenomena in one comprehensive formula, so as to exhibit their essential identity, showing that their difference is due to a difference of form, resulting from different conditions conformably to the universal laws of form, is called comprehension; and the most important advantage of comprehension is the simplicity

which in this way explanations or systematic descriptions acquire.[1]

Causation explains the changes of form but never the existence of either matter or energy.

THE METAPHYSICAL *x* NOT UNKNOWN.

Now the question arises: Is not what we here call "the innermost nature of reality" the surd, which lies without the pale of science, and whether or not we call it metaphysical, will always remain unexplained?

If subject and object are two aspects of one and the same reality, does not reality itself remain unknown and unexplained?

No! Reality does not remain unexplained, for it is the very material on which and with which our cognition is written; it is the best-known reality and most familiar of all facts, for it is the innermost nature of our own being. It is both the slate and the slate-pencil which in their interaction produce the writing, called the soul.

The importance of a comprehension of the innermost nature of being (which we call subjectivity) cannot be exaggerated as the basis of all psychical life; but as a factor in the comprehension of the objective world it has been greatly misunderstood. It is frequently regarded as the object of metaphysics, and according to a fashionable mysticism is claimed to be incomprehensible, and is supposed to represent the

[1] Ernst Mach speaks in this sense of the economy of thought.

surd of existence and to be the unsolved x of metaphysics. If this surd could be known, so the argument commonly runs, we should have the key to all the riddles of the universe. Its comprehension is regarded as a kind of philosopher's stone, and if a scientist could find the value of the metaphysical x, he would be in possession of the solution of all problems. But this is a great error and an exaggeration of the significance of subjectivity in the economy of cognition.

A misconception of that feature of existence which in living animal substance becomes feeling and in man blazes forth as consciousness, will throw all thought into confusion, but a right conception of it does not involve the advantage that in the future we can dispense with the drudgery of scientific investigation, as though the acquisition of further knowledge had become redundant. Faust's hope of opening channels of wisdom by magic is a mistake. The world-problem does not lie in the innermost kernel of existence, the subjectivity of the soul, which is sometimes called the metaphysical, but it reveals itself in objective nature. There it must be sought, and there alone it can be found. He who does not find the correct solution should find fault, not with reality, but with himself.

The world is not unintelligible, but he who is unable to decipher its wonderful cryptography is unintelligent. Faust is quite conscious of the fact that

his inability to acquire genuine knowledge is his own fault. He says:

"The spirit-world no closures fasten;
Thy sense is shut, thy heart is dead.
Disciple up! Untiring hasten
To bathe thy breast in morning-red."

["Die Geisterwelt ist nicht verschlossen:
Dein Sinn ist zu, dein Herz ist todt.
Auf, bade, Schüler, unverdrossen
Die ird'sche Brust im Morgenroth."]

The elements of subjectivity, being, as it were, the substance out of which the soul has been fashioned, are the same in man as in the dust that is trodden under foot. And Christ's words are literally true when he says: "God is able of these stones to raise up children unto Abraham."

The metaphysical nucleus of reality, the in-itself-ness of things and of ourselves (viz., subjectivity in general and in its elementary simplicity) does not contain the key to the problems either of science or philosophy. The identity which we must attribute to its nature in all its elementary forms, renders it unimportant as a factor in explanation. The diversity, however, which it exhibits in its various combinations, —now as phenomena of inorganic nature, now again as the irritability of a plant, and here in us as the soul of a rational being,—depends upon the forms which it assumes. These forms correspond to the forms of

their objective manifestations which are perceivable; viz., they become tangible, visible, and observable in the objective world.

The parallelism[1] of subjectivity and objectivity teaches us that the several things-in-themselves, as the inner aspects of various objects, must be regarded as much combinations of the elements of the metaphysical essence of all reality as the objects under our observation appear to our senses compounds of material elements. Considered in themselves, they are the Platonic ideas, or prototypes of things, and we call them "forms-in-themselves."

A harmonious world-conception is established if we can assign to the subject its proper place in the domain of objective existence; and if the several forms of objective existence can in their turn be described in terms known to the thinking subject. The most important part of the explanation must be done by mutual reference. It is by comparing and contrasting, by contemplating from opposite standpoints, keeping in view the essential and omitting the acci-

[1] Parallelism is not a good name; for there are not two things parallel, but there is one thing having two different aspects. Neither of these two aspects exists in itself and thus they are like two sides of a curve, radically disparate yet analogous in their details.

Our monism is neither materialistic nor spiritualistic. We claim that there is neither matter in itself nor spirit in itself. All matter contains the potentiality of spirit and all spirit manifests itself in bodily appearance. Yet we do not say that inorganic nature contains mind. Mind originates in and with the rise of organised forms. For details of this important problem see the author's article "Panpsychism and Panbiotism" (in *The Monist*, Vol. III., pp. 234–257) which is a discussion of Haeckel's, Edison's, and Professor Romanes's theories of panpsychism, containing an unabbreviated account of Edison's view of the subject.

dental, by seeing the differences without losing sight of the ultimate unity, that we finally arrive at a philosophy which (however defective it may be in details) will be satisfactory in its general plan. All we can expect is a correct world-picture that will serve the sailors on the ocean of life as a reliable chart for orientation and as a mariner's compass for a guide.

THE METAPHYSICAL SURD ELIMINATED.

By Metaphysics is originally understood a discussion of the ultimate principles of philosophic thought, but since the believers in things-in-themselves regard their speculations of these unknowable quantities as the deepest wisdom attainable, metaphysics has been identified with their revelations concerning the surd of philosophy. Metaphysics in the former sense (although it had better be called philosophy) is a discussion of the ultimate principles of philosophic thought, and it will remain forever a respectable science. It deals with the methods of thinking and investigating, elucidating the fundamental notions of science, the nature of object and subject, the function of formal thought and its relation to form (as an objective factor), the import of causation, etc., etc. But metaphysics in the latter sense is based upon the assumption that the idea of things-in-themselves is a justified notion and that it is not sufficient to analyse and classify the several elements of our experience, and that

in order to comprehend the world we must transcend our experience and introduce an hypothetical quantity which is the metaphysical x. In this sense metaphysics is of a doubtful nature and has caused many thoughtful scientists to turn their back upon it and assume what may with Ernst Mach be called an "anti-metaphysical" attitude.

The foregoing chapters are evidence of the anti-metaphysical character of the author's philosophy. It is his ambition to eliminate from philosophy the surd of metaphysics. But while he proposes to show that there is no reason to believe in the objective existence of any irrational quantity, he does not claim to have solved all the problems of the world. He has only solved one problem of general application and thus removed an obstruction to the progress of philosophical thought.

It is a vice of the old metaphysical method to look for the master-key of knowledge in some universal proposition that would serve as a formula for all detail problems. The idea that the riddle of the universe lies in one universal conception is widely spread. It finds expression in such sentences, frequently inserted even in text-books, that while we know what gold, lead, wood, and other substances are, we are perfectly ignorant of the nature of matter. Why? If we know what gold, lead, wood, etc., are, we know also what matter is. The idea of matter is the generalisation of all substance; it is simpler than the idea

of any single substance. For we must bear in mind that the wider the extent of an idea is, the poorer must be its content; and the widest generalisations are the emptiest of real concrete information. The metaphysical philosopher, however, having reified or hypostatised his words, looks upon matter, notas a mere generalisation of all substances, but as a real entity. He thinks of it as containing *in nuce* all the qualities of the material world, and thus the importance of the term is inflated beyond measure.

The removal of the surd in metaphysics only disposes of a source of error and will thus prove helpful in many respects, to philosophers as well as to scientists, but we must not expect more of it. The advantages of clear thought are sufficiently great and can not be exaggerated. So there is no need of repeating the old mistake of Faust who hoped to gain a comprehension of the world with all the mysteries of heaven and earth at one fell stroke by entering into nature's holy of holies and there grasping the innermost secret of existence.

* * *

The wealth of the world is such that its problems can never be exhausted. Every single problem, if it is legitimate and rightly formulated, can be solved, but with the growing expanse of our experience new problems arise and keep thought moving. Further, when we endeavor to reconstruct the conditions of

objective being in subjective thought, we find the methods of the latter frequently incommensurate to do justice to the former. Thus we can in arithmetical figures only approximate the relation between the diameter and the circumference of a circle, but for that reason the relation itself is definite and perfectly rational. We can construct it geometrically and its actuality is traceable in the mathematical relations, e. g., of the starry heavens, for the calculation of which the number π is indispensable.

There is a function in mathematics which cannot be executed; it is the extraction of the root -2, and we call it irrational (i. e., $\sqrt{-2}$). But the name is ill chosen, for $\sqrt{-2}$ is not irrational in the sense of being contrary to reason; it ought to be called the unrealisable, or irreducible. It is a function that cannot be expressed in numbers and so remains a surd—a thing that is deaf to our questions—a quantity that admits of no further treatment.

Surd is not absurd and the so-called irrational is not truly irrational. It is simply an irreducible quantity, and the fact that it is irreducible is due to the circumstance that if we try to reduce it we become involved in contradictions. So we must leave it alone as impossible. In the objective world there are conflicts and collisions, but always actualities, never impossibilities, and the laws of nature may exhibit contrasts but never contradictions. There is no surd in reality, and the surd of things-in-themselves which

presents itself as the irrational quantity in metaphysics is solely due to a faulty method of thinking.

* * *

Summa summarum: The source of knowledge is inner as well as outer experience, observation as well as introspection, but metaphysics is of no avail. Metaphysical philosophies must give way to the only true philosophy,—which is the philosophy of science.

The peculiar nature and the worth of man lies not in what metaphysicians call the thing-in-itself—granting here the propriety of the term,—it lies not in the presence of any metaphysical essence, not in the subjectivity of his existence, but in the truth of the images and ideas of which his soul consists. Man's soul is a description of reality *sub specie aeterni*; it is an image of God. God enters, as it were, in parts with every sense-impression into sentient creatures, and his likeness grows in clearness as the traces thus produced in living feelings reconstruct the World-Logos, which in man's soul appears as the divine spark called Reason. The progress of man's comprehension of natural phenomena, revealing the cosmic order of the universe and teaching the right conduct in life, is the history of God's revelation.

PHILOSOPHY DEFINED.

But what becomes of philosophy if metaphysics is gone? Is philosophy merely (as it was to Auguste

Comte) the sum-total of scientific knowledge, or has it still a province of its own?

Philosophy has, indeed, a province of its own, the limits of which are quite well defined. Philosophy is engaged with those inquiries which, according to their nature, are common to all sciences. An investigation of the constituents of water belongs to the domain of a special science called chemistry. But a consideration of the methods of science concerning the comprehension or explanation or systematisation of facts belongs to the department of philosophy. Yet, for that reason, philosophy, as we understand it, is not superscientific, but is a science among the sciences. And there are three great departments in philosophy:

First, philosophy is above all *methodology*. It has to investigate the basis of all the sciences; it has to define and explain the scientific methods which the scientist instinctively employs as tools of scientific inquiry. We need an elucidation of such ideas as causation, natural law, cognition, experience, reason, and truth. Further we must know how cognition originates, and thus the science of method includes logic, propaedeutics, and epistemology.

Secondly, philosophy must be *systematology*. From the data furnished by the most matured results of the various sciences philosophy constructs, with the help of the best scientific methods accessible, a world-conception which must be at once consistent and systematic. The tendency to construct philosophical sys-

tems is legitimate; but there has been much system-building in Germany during the nineteenth century that was wrong, because it was mere speculation and purely fictitious. A philosophical system should be a synopsis of the significant features of the sciences and not an air-castle of pure thought.

The hierarchy of the sciences which plays a prominent part in Comte's philosophy belongs to the department of systematology.

And, thirdly, philosophy has to apply the results of this systematised world-conception to a practical life. It must be what Kant calls *world-wisdom.* Philosophy must teach man his place in nature. It must enable him to strike the proper attitude in life. It must attune our souls to the harmony of the whole of which we are a part, and advise us as to the right conduct in life. This is philosophy as Socrates conceived it, viz., ethics in the broadest sense of the word.

Philosophy as world wisdom frequently supplies the remaining branches in an abbreviated form as mysticism, and whether or not mysticism is legitimate depends upon the spirit of its ethical applications.

Philosophy as here conceived may be called "the philosophy of science," because it recognises the importance of defining philosophy as the science of science, and insists that its methods and modes of operation are in principle not different from the other sciences. Philosophical cognition is essentially the same as scientific cognition.

Having outlined our own position, we propose now to discuss the rôle played by the metaphysical x in the systems of modern thinkers and will then conclude our disquisition with an elucidation of the soul question; for here the idea of things-in-themselves finds a practical application, and the old schools are so accustomed to regarding the soul as a thing-in-itself that they accuse modern psychology of being a psychology without a soul.

THE METAPHYSICAL RESIDUE IN THE SYSTEMS OF MODERN THINKERS.

METAPHYSICISM (viz., the belief in things-in-themselves, as a surd of existence or an irreducible x of some kind) changes with the growth of scientific thought slowly but surely into a systematic world-conception based upon a critical observation of facts, which may be called monism or positivism, or the Philosophy of Science[1]; and the period of transition will naturally be agnostic, viz., a philosophy which leaves metaphysics alone and declares the problems of metaphysics to lie beyond the ken of man. Agnosticism neither affirms nor denies the speculations concerning God, soul, and world.

The term agnosticism was coined by Huxley, but it will be seen that the inventor of agnosticism (as the philosophy of a suspension of judgment) was Auguste Comte, whose philosophy goes under the name of positivism, which (in contrast to genuine positivism) we call French positivism.

[1] A most appropriate title for the author's conception would be "the philosophy of form"; for it is by comprehending the nature of form and the purely formal in both domains,—subjective thought and objective reality, and their interrelation,—that we arrive at an explanation of the several problems of philosophy.

FRENCH POSITIVISM REPRESENTED BY COMTE AND LITTRÉ.

Auguste Comte opposes Kant's metaphysicism and attempts to replace it by the philosophy of positivism, but far from solving, or even attempting to solve, the metaphysical question, he proposes to ignore it. He made it a matter of principle to suspend his opinion on the most fundamental philosophical problems, because he regarded them as inaccessible and unsolvable. Comte accordingly is a metaphysical philosopher without either knowing or conceding the fact. He calls himself a positivist, but he is an agnostic, and thus it happens that the terms positivism and agnosticism are actually identified in many quarters, although agnosticism, the philosophy of nescience and negation, is practically the opposite to true positivism, which is, or ought to be, the philosophy of science.

Comte's doctrine of the three stages of knowledge, viz., the theological, metaphysical, and positive stages, appears to me of less importance. The doctrine of the three stages is at the same time not properly a Comtean idea; Comte adopted it from Turgot, the great statesman, and one of the greatest men, as a thinker and also as a character, that ever lived, and who is too little appreciated as such.

The main doctrine of Comte's positivism is the

doctrine that first and final cause cannot be known, and we must abandon our search for them; that human knowledge is limited to the middle, while the two ends are inaccessible. These insoluble questions, he declares, have made no progress from the beginning.

Mr. Lewes in his book *Comte's Philosophy of the Sciences* expresses his assent in the following words (p. 31):

"Our province is to study her [nature's] laws, to trace her processes, and, thankful that we can so far penetrate the divine significance of the universe, be content—as Locke wisely and modestly says—to sit down in quiet ignorance of all *transcendent* subjects."

This idea is the basis of his belief in the unknowable, and the works of all followers of Comte's philosophy abound in expressions that concerning the main problems of life "the positive philosophy will neither assert nor deny anything."

Littré concludes the last article of his volume *La Science* with the following words:

"The domain that lies beyond refers to the things that cannot be known. Positive science proposes neither to deny nor to affirm them. In a word, it does not know the Unknowable, but it recognises its existence. This is the highest philosophy. To go beyond is chimerical, to go not so far is to miss the mark."[1]

[1] Le domaine ultérieur est celui des choses qui ne peuvent pas être connues. La sciènce positive professe de n'y rien nier, de n'y rien affirmer: en un mot, elle ne connaît pas l'inconnaissable, mais elle en constate l'existence. Là est la philosophie suprême; aller plus loin est chimérique, aller moin loin est déserter notre destinée.

Now I must object to Comte's view of causation when he refers to first and final causes. Causation is transformation and causality is the formula under which we comprehend the changes of matter and energy that take place. The expressions first and final causes are misnomers.[1] First cause is either the starting-point of a series of some longer chain of causes and effects, or it means (as the term is generally used, not to say misused) the last ground or reason, i. e., the answer given to the ultimate question why?—which is the most general *raison d'être* that would explain and contain all the other and less general *raisons d'être* regarding the nature of existence. The term final cause, again, means either the last cause in a series of causes or (and so it is generally used) it is a misnomer for purpose; and the final cause supposed to be inaccessible to human comprehension is the purpose of the existence of the world at large. I object to the doctrine that there are three kinds of causes. There is one kind of causality only, and the causes of this causality in all the causal processes with which we are confronted are perfectly intelligible.

The problem of the first cause of the origin of our world, viz., the solar system and the milky way, was attacked first by Kant and later by Laplace, and the latter, without knowing of Kant's solution, solved it in the main in the same way. All recent investigations

[1] Compare the author's *Fundamental Problems* and his *Primer of Philosophy*, the chapters on "The Problem of Causality."

stand upon this Kant-Laplace hypothesis so called, having added corrections only as to details. Shall we declare that these labors are vain and gratuitous efforts of vague speculation? Littré, Comte's greatest disciple, says, with reference to such speculations, concerning the past and future states of the world (*le monde*):

"La dissémination primordiale de la matière qui devait le composer, la dissémination future de la matière qui le compose, dépassent toute expérience, dépassent toute conjecture."

Yet is not the problem as to the origin of the world at large, why matter and energy exist at all, insolvable? Littré says that the positive cosmogonies, such as the doctrine of evolution, do not touch the absolute; they have nothing to do with first and final causes. He says:

"Les cosmogonies positives la [i. e., la place des cosmogonies religieuses] remplissent, non pas qu'elles aient la prétention ni le pouvoir de pénétrer dans l'absolu et d'embrasser les causes premières et finales "—*Loc. cit.*, p. 560.

That kind of causality which is sometimes called "ontological," having reference to the existence, not of single things as transformations from other things, but of the world at large, and formulated in such questions as how did the universe itself, the world as a whole, originate, is properly speaking no causality, it is not a question concerning a cause, but concerning a *raison d'être*. However without haggling about the words cause and *raison d'être*, this ontological causal-

ity so called is by no means beyond human comprehension. The ontological question has found a very definite answer in the formulation of the law of the conservation of matter and energy, which declares that existence at large did not originate; the total amount of matter as well as of energy existed always and will exist always. It has not been created; it is uncreatable and indestructible; it is eternal.[1]

Littré is quite explicit in declaring that the positive philosophy eschews all theological and metaphysical problems. It is neither atheistic nor theistic, and does not side with either materialism or spiritualism. He says:

"Ni spiritualiste, ni matérialiste, la philosophie positive écarte de la science générale les débats que la science particulière a depuis longtemps et à son grand profit rejetés "—Preface d'un disciple in Comte's *Course de Phil. pos.*, p. vxvii.

Littré characterises as the main object of the positive philosophy, "to give to philosophy the positive method of the sciences, to the sciences the idea of the unity of philosophy." He says:

"Ainsi fut accompli ce qu'on doit appeler l'œuvre philosophique du dix-neuvième siècle, donner à la philosophie la méthode positive des sciences, aux sciences l'idée d'ensemble de la philosophie." Preface, p. viii.

I am in perfect agreement with Littré that to give to philosophy the positive method of science is the

[1] By matter is here meant the material of which the world consists; but not matter in contrast with and to the exclusion of ether, or whatever the material be called from which by condensation the visible world may have risen.

object of positivism; but, if I understand Littré correctly, I disagree with him in his conception of the positive method. He limits the positive method to what he calls "experience," and excludes every notion of the *a priori*. Littré apparently misunderstood the proper meaning of Kant's idea of the *a priori*, for he used as a matter of course the *a priori* method wherever it was indispensable, as for instance in mathematics and in the application of mathematics.

The problem of the *a priori* reasoning is the question, "Why can we know certain things before we have tested them by experiment? Man has not arrived by sense-experience, but by pure reasoning, at the conclusion that the sum of the angles of every plane triangle is 180 degrees. How is he justified in declaring *a priori* that the angles of a certain plane triangle make up 180 degrees, although he has not measured them?"

Littré has, so far as I know, never discussed the problem of apriority and necessity. He has simply rejected the idea of the *a priori* as the method of a false metaphysics, which is incompatible with the *a posteriori* method of positive science.

Littré was prejudiced against the *a priori*, and his prejudice induced him to underrate its importance. He said, for instance:

> "If it [thought] attempts to go out metaphysically into space, it is reduced to combining subjectively its own elements, turns in a circle without issue and falls back upon itself."

The *a priori* method of thought subjectively combining its own elements, is by no means a turning in a circle without issue so that in the end it will fall back upon itself. The *a priori* method of thought subjectively combining its own elements is employed by arithmetic, mathematics, and logic, and we are confronted with the astonishing fact that rules, or formulas, or calculations, which were made by pure thought subjectively combining its own elements, are applicable and hold good as reliable guides in our experiments. If there were no *a priori*, how could we predict or, what is more important still, how could we predetermine the course of nature? The *a priori* has been wrongly employed by the so-called metaphysical philosophers to give us information about the substance and essence of the world. But the misapplication of the *a priori* is no reason for denouncing it as radically wrong.

The existence of the *a priori* is an undeniable fact. Kant was right in recognising it in its sweeping importance, yet he was wrong in his interpretation of the *a priori*, which according to his transcendentalism was based exclusively upon a peculiarity of the mind and not upon the nature of things. The positivists in France not only objected to the wrong interpretation of the transcendentalists but also denied the existence of the *a priori*. Accepting the principle that every knowledge must ultimately be a statement of facts, the question, How is the *a priori* to be based upon

facts? became in my conception of philosophy the burning problem which was next in order as a reconciliation between Kant and Comte.

The French positivists, foremost among them Comte and Littré, have not given us an explanation of what is true and what false in the teleological and metaphysical notions of first and final causes, of the *a priori*, of God, of substance, of force, etc.; they have simply abandoned the investigation of these ideas which are after all the most important tools in the household of the human mind for scientific and ethical purposes; and thus they have, in spite of their positivism in questions of detail, retained the metaphysical method of *a priori* reasoning, which is quite legitimate in the formal science but out of place concerning facts. Take for instance the following argument concerning the materiality of things:

'Là, c'est à dire dans les sciences positives, on ne connaît aucune propriété sans matière, non point parce que, *a priori*, on y a l'idée préconçue qu'il n'existe aucune substance spirituelle indépendante, mais parce que, *a posteriori*, on n'a jamais rencontré la gravitation sans corps pesant, la chaleur sans corps chaud, l'électricité sans corps électrique, l'affinité sans substances de combinaison, la vie, la sensibilité, la pensée, sans être vivant, sentant et pensant."—*La Science*, p. 307.

I do not mean to say that there are immaterial or spiritual substances, but I should say that any purely *a posteriori* argument in favor of their non-existence is insufficient. Does Littré mean that a Zulu would

declare that ice cannot exist because he has never seen water frozen as hard as a stone? Any amount of experience, i. e., all *a posteriori* evidence, is in parts and will out of itself never acquire universal validity.

How strongly Littré is still implicated in the metaphysical method of applying *a priori* ideas to *a posteriori* experiences can be learned from the following statement:

"Le monde est constitué par la matière et par les forces de la matière: la matière dont l'origine et l'essence nous sont inaccessible; les forces qui sont immanentes à la matière. Au delà de ces deux termes, matière et force, la science positive ne connaît rien." Preface, p. ix.

The metaphysical ideas, matter and force, are *a priori* notions of mystical entities or things-in-themselves, and thus it appears natural that experience should know nothing of them. But real matter and actual force are not unknowable existences. They can be known. We know something of them and positive science is engaged in broadening and deepening this knowledge. While denying that positive science can know anything of matter and energy, Littré claims that we do know the properties of substance. He says:

"Les propriétés physiques sont manifestes en toute substance, dans quelque état qu'elle soit, isolée ou non isolée, et s'exercent sur les masses; les propriétés, n'apparaissent qu'entre deux substances, ont besoin de la binarité et s'exercent sur les molécules; enfin les propriétés vitales dépassant la binarité, ne sont compatibles qu'avec un état moléculaire plus composé." Preface, p. x.

If we can know the properties of a thing, we can know the thing too, which is but the sum-total of its properties; and if we can know all kinds of substance, we can also know substance. There is less to be known about substance in general, for the idea contains only those properties of the several substances which they have in common. Substance is not a metaphysical essence, but an abstract term which denotes certain features of reality, recorded in experience.

One of the fundamental principles of genuine positivism, is the definition of knowledge as a description of facts or of their properties. We call certain properties of the facts (i. e., the objects of our experience) matter, and others force. When we say that we do or do not know certain phenomena, we mean that we have or have not as yet succeeded in placing them properly in that system of thought-symbols of which our mind consists. Yet there is no sense in speaking of matter and force as being unknowable while the properties of matter and force are said to be manifest and to appear under certain conditions.

Comte is an agnostic and he was an agnostic before that name had been invented. His objection to metaphysicism consists in the doctrine, not that the object of metaphysics is a chimerical non-existence, but that the object of metaphysics exists yet it cannot be known. Thus he is as much a metaphysician as those philosophers whom he censures for their metaphysical views. He does not censure them for be-

lieving that the metaphysical exists, but for believing that it is knowable and attempting to investigate its nature.

As to Comte's hierarchy of the sciences (which in the form in which he presented it is now antiquated, because the sciences there summarised have made considerable progress since Comte's *Positive Philosophy* was written), I shall simply quote a few extracts from Eugen Dühring's criticism of Comte. Dühring says (*Krit. Gesch. der Phil.*, p. 486):

"If Comte's *positivism* were nothing more than what we have here laid down, its main contents would, strange enough, consist in *negativity*. The criticism of a certain kind of metaphysics, viz., of an ontology phantastical to a greater or lesser extent, would form its most significant character. The other element which consists in presenting a hierarchy and unitary conjunction of some of the sciences which are called positive in the usual sense of the term, cannot pretend to be philosophy in the higher sense of the word or even to be useful for science. A general view of knowledge, whether it consists of six or sixty volumes, does not add the least iota to the contents of our knowledge. . . . We cannot expect that a specialist should be pleased with a hierarchical sketch of his science, especially if the delineations are filled out with details of which he (the specialist) would be a better judge."

It is true, and I concur in this with the French positivists, that a positive philosophy must be systematic arrangement of knowledge. But I conceive it to be the philosopher's work to offer a digest of the sciences and not merely to take an inventory of their contents. Further, he should define the fundamental

concepts of scientific inquiry and elucidate the methods of cognition. Such fundamental concepts are the ideas, truth and criterion of truth, cause and effect, mind, thought, knowledge, ethics, etc. Concepts are the tools of thought and the practice of using them correctly has to be learned.

A positive philosophy is inseparable from, but it cannot be replaced by, the sciences. The duty of philosophy is to superintend the method and the plan of building, so as to compare the details and bear in mind the unity and purpose of the whole. In this sense Dühring says in criticising Comte (p. 486):

"However, concerning the form of the connections of methodical reflections, something can be done. Yet it must be possible to separate everything of such a kind and also new insights, so as to constitute a special branch of knowledge. Otherwise they will escape the specialists' attention.... Not only Comte but all philosophers given to the idea of systematisation and construction of particular knowledge have made attempts in this direction which at most may range as sketches or popular presentations in a higher sense.'

In other words positivism must become a systematic conception of facts. The description of the data of experience must be consistent and methodical. In other words: Genuine positivism is monistic. But monism is not merely a denial of dualism: on the contrary it is a recognition of dualities and their reconciliation in higher unities.

Monism in the sense of a one-substance theory is

pseudo-monism. It is not a unitary world-conception, but a single-idea system, and I propose to call it *Henism*.[1] Henism endeavors to subsume everything under one general notion, be it matter, or motion, or spirit, or matter in motion, or an unknown substratum. But the principle of genuine monism is consistency. It proposes to build up an harmonious world-conception based on the principle that there is but one truth. There may be contrasts, but there are no contradictions, in truth, and all truths should form one great system of verities.[2]

The most subtle ideas of the purely relational aspects of experience are of paramount importance in practical life which has led to their formulation in the popular form of religious doctrines. To discard religion as mere superstition as much betrays an unphilosophical mind as to accept it blindly. Comte recognised the significance of religion, but being limited in his knowledge of church life to Roman Catholicism, he failed by imitating too closely the forms of the Roman Church.

[1] From the Greek ἓν, the neuter of εἷς which is the numeral *one*, while μόνος means *one* in the sense of "alone, or one in kind."

[2] Prof. Ernst Haeckel, so admirable as a naturalist, is (in our opinion) not equally successful as a philosopher. He is a personal friend of ours, yet we must frankly state that his Monism remains on the surface and we would call it a pseudo-monism or henism. Haeckel does not appreciate the paramount importance of form, and thus he fails to see the significance of the ideal features of human life, the religious conceptions of God, soul, immortality. There is no need of entering here into details, and we therefore refer the reader to our articles on the subject which appeared in *The Monist*, Vol. II., No. 3, pp. 438–442. Compare also *The Monist*, Vol. II., pp. 598–600, and *The Open Court*, No. 212. See also "Theology as a Science" (*The Monist*, Vol. XII., No. 4, and Vol. XIII., No. 1).

Concerning Littré's view of Comte's religious vagaries, Dühring says (p. 483):

"His [Comte's] biographer, the Academician Littré of Paris, and also Stuart Mill are right in considering 'The Course of Positive Philosophy' as the main and fundamental work which is decisive as a contribution of his and a source of instruction to the world. However, they are very one-sided when they overlook that the philosopher even in his vagaries exhibited a universality of mind which remains superior to the standpoint of either Littré or Mill."

It must be granted that Comte's religion as he conceived it consists of vagaries, but the main idea of developing the religions of the past which, as Littré says, are not false but only incomplete religions, into a religion that shall be in accord with the science of our day is no vagary, but a great and an important ideal.[1]

Far be it from us to belittle either Comte or Littré because we disagree with them in the fundamental questions of philosophy. Comte was in his time, he is still, and will remain for ever, a star of first magnitude in our philosophical galaxy. That which we consider his errors does not detract from his greatness. Were not Kant's mistakes in a similar way closely interwoven with his great merits?

HERBERT SPENCER'S AGNOSTICISM.

A discussion of Mr. Herbert Spencer's agnosticism ought to follow the discussion of French positiv-

[1] As collateral reading compare the author's booklet *The Religion of Science*, and his article "The Problem of Consciousness" (*The Monist*, Vol. XIII., No. 1).

ism. But having devoted a special booklet to a ventilation of Spencer's philosophy under the title *Kant and Spencer; a Study of the Fallacies of Agnosticism*;[1] and furthermore in consideration of the fact that so far as the metaphysical problem is concerned, Mr. Spencer's view of the unknowable in no way differs from Auguste Comte's belief in the *inconnaissable*, the author feels no need of repeating himself. For a criticism of Mr. Spencer's peculiar methods of establishing his doctrine of the "utterly inscrutable" mystery of existence, see the third chapter of *Kant and Spencer*, entitled "Mr. Spencer's Agnosticism."

CLIFFORD AND SCHOPENHAUER.

When Clifford speaks of things-in-themselves he does not mean Kant's things-in-themselves; he means neither the object independent of the thinking subject nor the thing independent of space and time. He means the thing as it would be in itself, viz., if viewed from the thing itself.

A man appears to other thinking beings as an active body, as an organism that is in motion; but to himself he appears as a feeling being. The subjectivity of things as they appear to the things themselves consists in our own case of states of awareness, and this subjectivity is called by Clifford the thing-in-itself.

A certain brain motion is in its subjective aspect a

[1] Published as No. 40 of The Religion of Science Library (20 cents).

feeling. This feeling is, according to Clifford, the thing-in-itself of the brain-motion, which (at least in theory) is an observable and measurable process. The thing-in-itself of so-called inanimate beings is no feeling, but elements of feeling. In other words, the world-substance is everywhere in itself potentiality of feeling and Clifford therefore calls it "mind-stuff."

Schopenhauer arrives at his conception of the thing-in-itself practically in the same way. There is the world as it appears to us, the objective world of motion in space and time. What the kernel of this world may be, we can know from self-observation. The kernel of ourselves, Schopenhauer says, is Will; and the will is also the kernel of things; the will is the thing in itself.

Schopenhauer says:

"The source of the knowledge of metaphysics is not *outer* experience alone, but also *inner*. Indeed, this is most peculiar to it, and hereby the decisive step which alone can solve the great question becomes possible.... that at the right place it combines outer experience with inner, and uses the latter as a key to the former."

Schopenhauer agrees with Clifford in regarding the subjective as the thing-in-itself and looking upon the body, viz., matter in motion, as its appearance. There is only this difference, that Schopenhauer emphasises the active feature of the subject, while Clifford excludes activity as being typical of motion, viz., objective existence.

This procedure practically identifies the metaphysical with the subjectivity of existence, and we accept it without hesitation; but in doing so we bear in mind that we do not enter here into a domain from which science is debarred. An investigation of the subjective nature of ourselves and other sentient beings is commonly called psychology and not metaphysics, and the methods of psychology are the same as the methods of any other science. Explanations are as much descriptions in psychology as in physics; there is only this difference, that what Schopenhauer calls metaphysics is, as it were, generalised psychology. We attribute to other beings, according to their form, subjectivities analogous to those which our own bodies possess. Now, suppose we call such a generalised psychology by the traditional term "metaphysics," and the innermost nature of reality "things-in-themselves," we should most certainly not be justified in saying that our cognition invariably leads us to an x, that we always arrive at an unknown quantity, concerning the nature of which we cannot have the faintest idea or comprehension.

The science of a generalised psychology or metaphysics would have to explain how the ultimate constituents of man's soul are the same as the subjectivity of a burning flame or of a falling stone. It would have to explain how the subjectivity, plain and simple as it appears in inorganic nature, builds up a higher life in organised animal nature, where it be-

comes feeling, and how feeling becomes mind by being representative of the various objective conditions which produce a variety of feeling.

Schopenhauer says (*ibid.*, p. 202):

"How can a science that is derived from experience lead beyond experience, and thus deserve the name of metaphysics? It can *not* do so in the same way as, according to the rule of three, the fourth number, or as from two sides and an angle the third side of a triangle is found....The whole of experience is like a cryptography, and philosophy is its explanation, the correctness of which is proved by the sense that appears in the context. If the whole is only understood in its full depth and connected with inner and outer experience, it must be possible to be interpreted and explained out of itself."

If metaphysics denotes "that which ventures beyond experience" (this is Schopenhauer's definition), we deny the existence of metaphysics, for our subjectivity is, as Schopenhauer himself says, inner experience. Our soul is the metaphysical essence of our bodily being, and what is better known to us than our own existence? Neither is the object of metaphysics, viz., the so-called thing-in-itself, or the innermost nature of being, i. e., the subjectivity of existence, anything that lies beyond or behind nature and outside of the range of science. On the contrary, it is the heart of nature, its essence or the inner nature of nature. The metaphysical, accordingly, is so far from being outside of experience that it is the very cornerstone of the possibility of experience. It does

not lie beyond the limits of our cognition of nature and involves us in no *ignorabimus*.[1] It does not commit us to a belief in anything intrinsically unknowable, which is always the confession of philosophical insolvency. It is so far from being foreign, unknown, or incomprehensible to us that it forms the very essence of our own existence. For this same reason Goethe objects to the idea of the inaccessibility of Nature's interior.[2] He says:

1 Du Bois-Reymond, in speaking of the *Grenzen des Naturerkennens*, sums up his view in the Agnostic conclusion *ignorabimus*, which (with a leaning toward mysticism) he presents to us as a sevenfold world-riddle. See his lecture *Die sieben Welträtsel*.

Du Bois-Reymond's proposition, that "if only one single brain-atom could be moved by thought one-millionth fraction of a millimetre from the path prescribed by the laws of mechanics, the whole world-formula would cease to have meaning," is quite true, if by "thought" is understood the mere subjectivity of thought, while the objectivity is considered as operating without our taking reference to its subjectivity. But we must not forget that there are no thoughts which are not at the same time brain-motions; and there is no question that while a man thinks the atoms of his brain move; and these brain-motions, small though they are, are of enormous consequence, for they, being the exponents of conscious aims, bring purpose into the world of physical causation, which renders "the world-formula" such as a physicist may propound by confining his attention to mechanics alone, but is immeasurably more complex, without annulling it. Du Bois-Reymond's proposition is misleading because the word "thought" is an abstraction, and there are as little ideas which are not at the same time motions, as there is gravity outside of mass. If he understands by gravity the abstract notion of the subjectivity of mass, to the exclusion of real mass, he might as well have said: "Gravity exercises no influence in the world which is strictly governed by mechanical law. If one single dust-particle could be moved by gravity one-millionth fraction of a millimetre from the path prescribed by the laws of mechanics, the whole world-formula would cease to have meaning." And the same proposition can be varied *ad libitum*. In the same sense, "chemical affinity" cannot move a single atom, and if it could, the laws of mechanics would be meaningless.—(Compare *The Monist*, Vol. III., No. 4, pp. 612–615, where this subject is discussed in detail.)

2 If the terms esoteric and exoteric were not monopolised for another purpose, we might introduce them to denote the subjective and the objective aspects. We might call the soul the esoteric and the body the exoteric side of our existence.

"Schritt für Schritt
Sind wir im Innern."[1]

The method, however, by which we arrive at the conclusion that the inner nature of other things is analogous to our own inner nature is exactly the same rule of three which Schopenhauer regards as insufficient. He himself applies it unconsciously, while Clifford gives precision to Schopenhauer's solution of the problem by saying:

"*As* the physical configuration of my cerebral image of the object

"*Is to* the physical configuration of the object,

"*So is* my perception of the object (the object regarded as complex of my feelings)

"*To* the thing-in-itself."

In other words:

As the brain-structure (which is matter in motion) is to its analogous idea, so the object is to the innermost nature of the object. Or as cerebral activity is to my soul, so the material object (the phenomenon) is to the soul of the object as the object is in itself.

This conception, which is a consistent monism, recognises the spirituality of all existence, but it excludes the possibility of ghosts. Ghosts are bodiless souls, and souls, wherever they exist in reality, will, by the very fact of their existence, appear as material bodies to other sentient beings, and must originate,

[1] Literally: "Pace for pace, we are in the interior." For a full metrical translation of the whole poem see p. 91 of the present volume. (Cf. *Fundamental Problems*, pp. 141–142; and *The Monist*, Vol. II., pp. 154-155.)

act, and evolve according to the mechanical laws of change. They cannot be conjured by magicians from the vast inane, but must develop in nature according to the laws of nature. On the other hand, the laws of nature do not give us an account only of purely material phenomena. By revealing the laws of the physical exterior we can decipher the spiritual (the subjective, or, if you please, metaphysical) interior of the various objects that people the world around us.

Schopenhauer uses the term "will" in a peculiar sense which can easily produce confusion. We understand by will the passage into action, i. e., an incipient motion of the organism if accompanied with the psychical element of consciousness, and this consciousness is a state of awareness of the will including its direction and aim. Will, as the term is generally used, is always conscious. Schopenhauer however speaks of the will as being blind, i. e., without knowledge, without awareness of itself and its aim. This indicates that he uses the word not in its original but in a figurative sense.

The fall of a stone may be characterised as a blind motion without awareness and without the stone's having a consciousness as to its direction or aim; and in a similar (although not the same) way Clifford speaks of the elements of feeling as being not rational. We agree with Schopenhauer that that factor in a stone which makes it fall when placed in a certain position is as much a natural process as the act of a

man, only of a lower grade and a simpler kind. Schopenhauer calls that which both have in common "will." Yet in common language we call the objective aspect of that which both processes have in common, "motion." What then is the subjective aspect of a falling stone? It is not a state of awareness, it is not feeling, but it is the potentiality of a state of awareness, it is potential feeling. There *is* a subjective aspect, but this subjective aspect is, so far as we can judge, of no account to the stone.

That something in the stone which corresponds to man's consciousness, viz., the stone's subjectivity, is neither will nor mind, but it is potential will and potential mind. But potential mind is not (as for instance Mr. Conybeare expresses it) "mind diluted"; potential mind is no mind at all.

Clifford calls the elements of reality (viz., the subjectivity of existence), "mind-stuff," because they are the stuff of which mind is made up. "Matter" is only the mental picture in which the mind-stuff represents itself, but mind-stuff is "not rational, not intelligent, not conscious."

So far we agree with Clifford, but we go one step further. While it is true that "reason, intelligence, and volition," as he says, "are the properties of a complex," we know at the same time that the conditions through which "reason, intelligence, and volition" are formed are founded upon laws of form which are (as laws of form) intrinsically necessary, and uni-

versal, and omnipresent, and immutable, and consistent (i. e., intrinsically harmonious[1]), and omnibeneficent, and unfailingly just. And they are the most real realities of existence. They hold good everywhere and apply to any possible world; they would remain true even if the world did not exist. They are the immanent law of nature; but they are above nature, and even if the constitution of nature were different, they would remain in force. Thus they are in the literal sense of the word supernatural.

Clifford overlooks the importance of these points and thus arrives at a conclusion which would stamp his philosophy as atheistical. Human reason does not originate through a haphazard combination of non-rational elements; but according to a law which constitutes the characteristic feature of the cosmic order. While the elements of existence cannot be regarded as rational, there is intrinsically immanent in all existence the formative factor of the eternal and omnipresent law that makes for rationality, and for all the ideals of a rational mind,—wisdom, righteousness, loving-kindness.

The laws of form are not concrete things but universal presences; but because they are not material objects, they are not non-existent, nor ineffectual, nor unreal. On the contrary, they are superreal and more important than any concrete things of actual materiality.

[1] Humanly speaking, we might say "all-wise."

The world-substance as it exists in inorganic matter is not mind. But the universe taken as a whole, the All, is for that reason not less than mind. On the contrary, it is infinitely more than mind. The All is not brute force and inert matter only, the universe is a cosmos, and its subjectivity develops, according to the laws of form which characterise the cosmos throughout, into mind. We disagree with Professor Clifford most emphatically when he describes the mind-stuff of which according to his terminology the world consists, as not rational.

The world, it is true, is not rational in its elements, but the world as a whole, the entire cosmos with its laws and especially in its formal order, is the prototype of all rationality. Human reason is rational only in so far as it conforms with, as it reflects, as it describes, the order of the cosmos. The human mind is a microcosm. We do not call the macrocosm, in whose image the microcosm has been created, a mind, because we understand by the term mind not reality itself but reality pictured in symbols of feeling. We understand by mind the individual conception of the world as it is mapped out in the brain of a sentient being, and not the universe itself, not the all-being. We understand by mind a creature and not the creator, a soul and not God.

The cosmos, viz., the world in its entirety, the harmony of its constitution, religiously speaking, God, that which creates the mind, is not dead, not irra-

tional, and not inferior to mentality. It is the source of all life, it is the condition of all order, it is the standard of all morality. All the minds that exist are but parts of it. In it, with it, and through it, we live and shall live forever. For although we shall die, our being can never be blotted out. Existence knows no annihilation and life knows no death. What we call death is a dissolution of life in a special part, but the contents of a life, the thoughts, the ideas, and the ideals, are preserved and transmitted, they are implanted into other minds; the soul continues to live. And this continuance of the life of the soul is not a mere dissolution in the All, it is not the immortality of force and matter (as Haeckel puts it); it is the preservation of its spcial existence, of its most characteristic and individual features for an immeasurably long period hence, which will last as long as the conditions of life remain favorable upon earth. Yet even if a whole solar system were broken to pieces, life would reappear; mind would be born again to struggle for truth and to aspire to live in conformity with truth, and even there, in other worlds, rational beings would appear and struggle for the same ideals we strived after. If we knew them as we know ourselves, we should sympathise with them as with our children, and should see in them an incarnation of our own souls.

PROFESSOR DEUSSEN'S MODERNISED METAPHYSICS.

Professor Paul Deussen's *History of Philosophy*, is in every respect abreast of the times, save in the one point which is so deeply ingrained in the school-philosophy of to-day: it still clings to metaphysicism. Professor Deussen defines philosophy as being in the main "the search after the thing-in-itself." He declares that it is peculiar to philosophy to regard the object of its inquiry, which comprises the totality of all existence, as "something that *needs further explanation*," treating it as "a problem that points *beyond itself*." He says: "While all other sciences are physical, philosophy is metaphysical." Although he denies that philosophy goes beyond experience in a transcendent way, he yet insists that "philosophy penetrates experience in order to seize its kernel, while all physical science remains engaged with its shell. Thus all philosophy is ultimately metaphysics."

The distinction between the metaphysical kernel and the physical shell of nature was the basis of Haller's agnosticism, who said:

> "Nature's 'within' from mortal mind
> Must ever lie concealed,
> Thrice blessed e'en he to whom she has
> Her outer shell revealed."

Goethe most emphatically rejected Haller's view by saying:

"'*Nature's "within" from mortal mind*,'
Philistine, sayest thou,
'*Must ever lie concealed?*'
To me, my friend, and to my kind
Repeat this not. We trow
Where'er we are that we
Within must always be.

"'*Thrice blessed e'en he to whom she has*
Her outer shell revealed?'
This saying sixty years I heard
Repeated o'er and o'er,
And in my soul I cursed the word,
Yet secretly I swore.
Some thousand thousand times or more
Unto myself I witness bore:
'Gladly gives Nature all her store,
She knows not kernel, knows not shell,
For she is all in one.
But thou,
Examine thou thine own self well
Whether thou art kernel or art shell."

There is no harm in using allegorical expressions, such as kernel and shell, but there is danger in building philosophical theories upon them. Nor is there any objection to the term "metaphysical," provided it be clearly defined, and all misconstruction, as though it meant something that points beyond experience, or leads behind nature, be excluded.

Professor Deussen has also written a text-book on *The Elements of Metaphysics*, which is of interest as an elaboration of a metaphysical philosophy, which, so far as historical and philological scholarship is concerned, is thoroughly up to date. The very first page, however, shows the lack of a truly scientific spirit, so

much needed in philosophy. Professor Deussen begins dogmatically with the proposition that two standpoints are possible, the empirical and the transcendental. The former, inquiring into phenomena, is "physics" in the widest sense of the world; the latter, inquiring after the thing-in-itself, is "metaphysics." In paragraphs 7 and 8 we are told that time and space are infinite. In paragraphs 8 and 10 he says: "Everything that exists necessarily exists in space, for otherwise it would be nowhere, and accordingly would not exist at all." The same argument is repeated in paragraph 10: "Everything that happens necessarily happens in time, for otherwise it would happen never, and accordingly it would not happen at all." This start is characteristic of a metaphysical philosophy.

A positive philosophy begins with a statement of facts. Facts are our data which have to be explained, but it is not easy to determine what "facts" in this sense means. The facts from which we have to start are the experiences commonly called sense-perceptions; and upon a further inquiry, we discover that they are the elements which in the long process of evolution have built up our soul.

As to time and space, the positive philosopher does not predict their infinity, but inquires into the nature and origin of these notions. We find that both are the product of abstraction, and would say that an idea from which the notion of space is excluded repre-

sents something whose nature is independent of space. Thus there are indeed many things which exist without being either in time or space. The existence of non-spatial realities is an old *crux* in philosophy, as we know from *The Questions of King Milinda*, where Nâgasena maintains and proves the positive existence of Nirvâna, although Nirvâna is neither in time nor in space. The unbeliever is refuted by a *reductio ad absurdum* and Nâgasena proves that according to the logic of his adversary wisdom is an non-entity, for it is nowhere.

Space is not (as Kant has pointed out) a mysterious entity. It is not a thing-in-itself, not a metaphysical box in which existence is contained. But it is a feature of existence. Space is extension, and extention is a quality of the objective world. As extension, space represents the interrelation of things, including, if they are in motion, also a possible interrelation, viz., direction and all possible change of direction, or, in a word, the possibility of motion.

The infinity of space would be mysterious, if it were a box in which the world is contained; but it ceases to be mysterious as soon as we understand that it is the possibility of motion which in every direction is unlimited.

Time, in the same way, is not an incomprensible monster which swallows the things that are now, and, at the same time, begets the things that will be. Time is as little a thing-in-itself as space. Time is not that

which contains all the events that take place, but it is an abstract idea derived from the facts of our experience. Time is nothing but the purely formal aspect of the measure of change, considering the succession and duration of events. Time, as measure of change, is accomplished through the establishment of a unit of duration.

Professor Deussen assumes metaphysics in the very beginning of his philosophy. No wonder that after a critical examination of the material under his hands he finds throughout a metaphysical residuum, casting a glamor of mysticism over his whole world-conception, which may be characterised as a modernised edition of Schopenhauer's philosophy.

The main difference between Professor Deussen's and our own views becomes most apparent in his judgment of Kant. He says:

"It was Kant who after so many vagaries of human thought proposed the question, whether we have at all in human reason a fit tool to transcend experience and to discover any tenable propositions concerning such transcendent objects as soul and God."

Kant, in our opinion, was right in denying to the faculty of reason the power of transcending experience, but we will add that this feat is not required of reason. Reason is a fit tool to extend experience, to deepen its significance, to systematise its data and arrange them for a handy application to practical life. The ideas God and soul, if considered as transcendental objects, are empty metaphysical speculations

without any practical value, and, indeed, being *ex hypothesi* transcendent, also without any theoretical value. We do not find them in our experience and can safely say that we know nothing of them; therefore we need not bother about their existence. Whether transcendent existences exist or not, affects us in no way.

We shall see, however, that the terms God and soul have been invented to denote some most important features of reality, such as we find in experience, but in this latter sense they are neither transcendent, nor metaphysical, nor unknowable, but form, whatever name we may give them, the daily bread of our intellectual, moral, and emotional life.

Kant when investigating in his *Critique of Practical Reason* the part our ideas of soul, of cosmic unity, and God play in our moral aspirations, left as he found it the most important part of the philosophical problem which he attacked. The fallacies of metaphysicism he put down as paralogisms of reason herself and sanctified them for practical purposes in the shape in which our religious traditions had cast them. Instead of keeping two contradictory accounts, one for theoretical and the other for practical reason, he should have proceeded to purify the meaning of these practical ideas in the furnace of pure reason. By the elimination of their metaphysical interpretation he could have reduced them to their proper significance in practical life, and would thus have at once cor-

rected the error and explained its origin. This work, left undone by our great master, is the task we have set ourselves to accomplish.[1]

Deussen continues:

"His investigation into the nature of reason induced Kant to subject the whole apparatus of cognition to an unprecedented critique and examination, the result of which was the indubitable proof that it was impossible to go beyond experience, and at the same time a radical destruction of all speculations concerning soul, the world-totality, and God. On this occasion Kant made the greatest of all discoveries which ever was made in our science, viz., that certain portions of empirical reality which we naturally regard as belonging to the outer world, space, time, and causality, are in fact nothing but inborn forms of our own faculty of cognition."

The author's own mind has been trained in the school of Kant, and he reveres him as the master at whose feet he sat. Nevertheless, he regards this so-called greatest of all discoveries as a great mistake,—*great* in the best sense of the word. It is a grand mistake because it was due to the boldness of a great thinker who took the consequence of an error seriously and dared to think out its consequences. Kant courageously drew the inferences of his error in spite of their absurdity. In my opinion, Kant was right in his distinction between the *a priori* and the *a posteriori*, but he was wrong in attributing the former exclusively to the subjectivity of our mental conceptions. All

[1] See the author's *The Religion of Science*, *The Ethical Problem*, *Homilies of Science*, *Whence and Whither*, and other publications.

the *a priori* sciences are ideal, as Kant says, but Kant uses the word "ideal" in the sense of subjective, and this confusion of ideality and subjectivity is the error hidden in the foundation of his philosophy. And Schiller says:

"Let but an error be hid in the stone of foundation; the builder
Buildeth with confidence on: never the error is found."

Kant being unable to derive the *a priori* from experience which he unfortunately limits to and identifies with the *a posteriori* or the sense-element of experience, seeks his principle of explanation beyond experience in "the thing-in-itself," and Deussen accepts Kant's position. He says:

"The consequence of Kant's great discovery was that the world, such as we know it, viz., extended in time and space and regulated by causality, is in this its form a mere phenomenon and not a thing-in-itself."

Kant leaves us in doubt, and Professor Deussen will probably not be able to explain to us what Kant really meant by thing-in-itself. It may mean (1) the object as it is independent of sensation, or (2) the object as it would be in itself, i. e., the object's subjectivity; what we might call the soul of the object; or perhaps (3) the metaphysical condition of physical existence, the *raison d'être* of being and its ultimate ground.

The cognition of the thing-in-itself in the first sense, as object, is the domain of science. The ob-

jective reality which produces the subjective phenomenon of a rainbow is by physics supposed to be a certain refraction of ether-waves. The colors of the rainbow are a phenomenon that exists in the eye only; but the ether-vibrations are an objective process which is supposed to take place whether or not any eye perceives it. The thing-in-itself in the first sense is neither outside of space, time, and causality, nor is it any incomprehensible metaphysical entity.

As to the thing-in-itself in the second sense, which is the subjectivity of the objective existence, we must bear in mind that it stands to its sense-perceptible existence, as a material object appearing in time and space, in the same relation as our soul stands to our body, and we have good reasons to believe that its nature exactly corresponds to the structure of its bodily appearance, so that in lower animals it is as different from man's soul as is the animal organism from the human organism; while in inorganic nature it is on a still lower plane. Accordingly it is not unknowable, but, lying within the pale of space, time, and causality, it may be understood from its manifestation in objective existence.

Finally, the thing-in-itself in the third sense is perhaps not different from the thing-in-itself in the second sense; for we are justified in assuming that what we commonly call the soul of man is the core of his being which manifests itself in his bodily appearance.

However, if thing-in-itself designates the eternal aspect of things, viz., their ideas in the sense of Plato's philosophy, we reach the realm of pure forms; and in the laws of pure form we have found the principle that will explain the nature of existence. Yet whether we call it with Fichte the ego, or with Spinoza substance, or with Jacob Böhme God, or with Schopenhauer the will, is perfectly gratuitous. All these terms are names originally invented to define a certain part of existence which is felt to be of great importance and may allegorically be called the innermost kernel of being. The nature of all things is determined by their form, and if we consider them in their absolute existence as pure ideas we have "forms-in-themselves."

Forms-in-themselves are nothing unknowable nor mystical. As soon as they are supposed to lead beyond experience into a transcendent sphere, we enter the realm of dreams. So far as these ideas denote a feature of our real experience they are helpful, but as soon as they are hypostasised, they assume the existence of entra-experiential entities which renders them redundant, and we can very well do without them. Our soul is real enough such as it appears in the facts of life, and God is great enough such as we comprehend him in the dispensation of life as the superpersonal omnipresence in the universe constituting the ultimate authority of moral conduct.

According to Deussen:

"Kant considered the essence of the thing-in-itself as theoretically unknowable, yet he opened upon it in the second and practical part of his philosophy an outlook by referring moral action to an *a priori* innate moral law which he called a categorical imperative, and this he declared to be the law which man as a thing-in-itself prescribes to man as a phenomenon."

Mentioning among the successors of Kant such men as Fichte, Schelling, Hegel, and Herbart, who "hoped to overcome in an offhand way the difficulties discovered by Kant," Deussen adds:

"In opposition to them, Schopenhauer attempts to comprehend Kant thoroughly, and to free his doctrine from the weeds of misunderstood traditions. Upon this foundation he applies Kant's ideas, in the direction pointed out by himself, in such a way as to make Kant the founder, and Schopenhauer the perfecter of a unitary metaphysical system built upon experience alone, and thoroughly consistent in itself. As such it appears in its practical part as a Christianity which in its full profundity is renewed upon a scientific basis, to remain, as far as can be foreseen for the ages to come, the foundation of all scientific and religious thought of mankind."

Schopenhauer and Kant are both great, and we regard a study of their works as the indispensable school through which the philosophers of the future will have to go, but we cannot share the opinion of Professor Deussen, who, we are firmly convinced, overlooks the great errors which these masters of thought have propounded.

PROFESSOR FRIEDRICH JODL.

It is characteristic of the metaphysical philosophies that their conception of the thing-in-itself is hazy and mystical. It is a mere surd, undefinable and indescribable, endowed either with negative qualities or with the glamor of sentiment. It becomes ineffable and the object of religio-philosophical awe. A modern thinker, therefore, who deems it best to retain the idea of things-in-themselves, should first of all try to give precision to the term, and this has been attempted by Prof. Friedrich Jodl of Vienna.

Professor Jodl, the author of an excellent and well-known *History of Ethics*, made the attempt to convince me of the desirability of retaining the term "thing-in-itself," and his views are so well expressed, so comprehensive and concise, and at the same time so representative of a large class of powerful thinkers trained in the school of modern philosophical thought, that the philosophical public should be acquainted with his arguments, which will give the anti-metaphysical author a chance further to elucidate his own views in contrast to one of the ablest professors of philosophy of the present day.

In answer to a letter of mine, Professor Jodl formulates his modernised view of the "thing-in-itself" as follows:

"You are right. The thing-in-itself is a dangerous idea,—one that easily leads astray. But so long as we have no better expression to represent the relation for which it stands we shall have to use it. You also accept the following three momenta: (1) Objective existence or reality. (2) Effectiveness of Reality upon consciousness, i. e., sensation. (3) Effectiveness of sensation upon consciousness and reproduction of sensation in consciousness, i. e., representation. Nobody, however, can maintain that in sensation, and still less in representation, the whole of reality will appear in consciousness. First we learn from history what progress has been made in the cognition of reality and secondly it is obvious that we are infinitely far from an actual comprehension of reality. We have strong reasons to suspect that there are many processes in reality which in no way affect our sensibility and cannot enter into consciousness, and we know for sure that we do not comprehend —i. e., reconstruct from them assumed causes—many things, indeed most things, which we observe in their effects. Our cognition of nature, if we begin to construct, always leads us to some x. It may be doubted whether this x is an unknown or an unknowable. In my opinion it is both—anyhow we cannot eliminate it.

"I am convinced that many things which are unknown to-day and appear as unknowable will be known and knowable in a thousand years. But I doubt whether the total mass of the Unknowable has been noticeably diminished. For the Unknowable is infinite and the infinite if divided by any finite number can never produce a finite number. Every solved problem contains new and greater problems. What shall we call this? I believe that the term "thing-in-itself" is after all the best expression. Whoever wants to turn a mystic on account of it cannot be prevented. This state of things can be brought out of existence by an act of violence only."

It is most certainly true, as Professor Jodl says, that sensations do not depict the whole of reality.

But why should they? Cognition is possible only by limiting the attention to a special point. Every sense-organ is an organ of abstraction. Every sense depicts the effects of reality in its own way and in this way alone. It may freely be granted that there are many processes in reality which do not affect our sensibility. Yet there is nothing in reality which does not affect something in some way. If it did not, it could not be said to exist. The chemical rays of light do not affect our eye, they are invisible and were for that reason not noticed. But these rays are not without any effects. If we cannot observe them directly, we can invent sensitive plates or other instruments for observing their effects indirectly. Indirect observation makes it possible that the limitation of our senses does not result in a limitation of knowledge.

Says Professor Jodl:

"Our cognition of nature if we begin to construct always leads us to some x."

This sentence indicates that Professor Jodl's and our conception of cognition are different. Cognition is not a reconstruction of assumed causes; it is a unification of our representative sensations or ideas. Something is again noticed, it is re-cognised, to be the same thing. Cognition is adaptation of new facts to our present stock of knowledge; it is the proper arrangement of new data in our system of mental representations. Cognition, accordingly, is the reduction of the unknown to terms of the known.

It is true that here and there and in many places wherever we turn we are confronted with an x; but scientific investigation solves the problem and establishes the value of one x after another. Professor Jodl obviously means an unknown quantity that cannot be reduced to a known quantity, viz., a surd, i. e., an x, the value of which cannot be determined. But is that possible?

The positive conception of cognition is, as Kirchhoff defines, "an exhaustive and most simple description of facts." It is a reconstruction of facts or, as Mach says, *Ein Nachbilden der Thatsachen.* Cognition is based upon *Anschauungen;* it will lead to an ultimate x only in case we expect that cognition instead of being a description of facts will have to give us information about how it happens that facts exist, how they originated out of nothing.

Professor Jodl's thing-in-itself is not outside of Space and Time (as is Kant's thing-in-itself), but it is the overwhelming infinitude of problems to be solved with which we cannot hope to get through even though our life lasted billions of light-years. Let me repeat here what I said in the second edition of *Fundamental Problems*:

"A philosophy which starts from the positive data of experience, and arranges them in the system of a monistic conception of the world, will meet with many great problems, and in solving them will again and again be confronted with new problems. It will

always grapple with something that is not yet known. The unknown seems to expand before us like an infinite ocean upon which the ship of knowledge advances. But the unknown constantly changes into the known. We shall find no real unknowable wherever we proceed. The idea of the unknowable is like the horizon,—an optical illusion. The more we advance, the farther it recedes. The unknowable is no reality; the unknowable can nowhere prevent knowledge, nor can the horizon debar a ship in her voyage from further progress" (p. 271).

Man's knowledge has value as positive information concerning the facts he has to deal with, and the infinitude of the not known, the infinitude of other problems and things which he will never face, is of no consequence whatever. Positivism commences and has to commence with the positive facts of the given experience and not with the infinitude of possibilities which lie beyond our horizon. Compare knowledge to property and suppose a man is to buy a farm. Shall we discourage him with the idea that the whole amount of soil on the surface of the earth and of other planets is infinite, and this infinitude of all existences if divided by his finite little possession can never result in a finite numbers? Even if it were doubled, if it were multiplied a thousand times, it remains as good as nothing in comparison with the rest of the world which he cannot acquire. However, his pos-

session is something to him, whatever the relation of infinite possibilities may be in proportion to it.

The concept of infinitude serves a good purpose in its place, but we cannot use it for analogies in other fields or bring it in relation to concrete realities. We produce confusion and drop into mysticism as soon as we handle the idea of infinitude as if it were a positive thing. The infinite is a function which is mathematically expressed by $\frac{1}{0} = \infty$, and whenever we bring anything in relation to the infinite we at once dwarf the greatest number no less than the smallest number into zero.

Clearness of thought is the indispensable method of sound philosophy for constructing a positive world-conception, which in great outlines is a description of the facts of reality. By suffering mysticism as a legitimate conception either in science or in philosophy, we enhance the interests of those who prefer the chiaroscuro of vague notions to clear thought.

My criticism of Professor Jodl's view led to further correspondence on the subject which is here reproduced.

Professor Jodl wrote in reply to my arguments as follows:

"A formal rejoinder to your criticism you can hardly expect from me, for, despite what you say against my remarks on the 'thing-in-itself,' I am not sensible of any far-reaching difference between us. I agree perfectly with your definition of reality; reality (*Wirklichkeit*) is effectiveness—relationship; and, therefore,

a 'thing-in-itself,' in the sense of an isolated 'thing *by* itself,' is a self-contradiction. And one more thing is certain. We can only call a thing real provided it produces effects, not generally only, but upon us. But how you propose, even admitting all this, to eliminate the mooted x from our cognition, I cannot exactly understand, no more than I can accept your definition of cognition. The definitions of Mach and Kirchhoff which you cite are not philosophical definitions, that is, epistemological definitions, but propædeutic or didactic definitions, by positive inquirers in special fields. In a philosophical sense I regard them as nothing more nor less than incorrect. It is quite right that we should regard a matter as explained scientifically when it has been shown to be a special case of a process already known; but as philosophers, it is hoped, we shall not deceive ourselves by forgetting that this known phenomenon closely viewed is also something about which we know nothing. We agree to leave it out of account simply because it is relatively near to our imaginations and of common occurrence.

"Take the most general example.

"When Newton saw the law of falling bodies in the central motion of the moon about the earth, the motion of the planets was 'explained,' and astronomers were able to 'describe' that motion in Kirchhoff's sense as precisely as possible, that is, by means of mathematical principles. But what really takes place in gravitation, whether it is a general property of matter, whether it is the effect of mechanical causes,—on that point, as you know, people are still, or rather, are *again*, racking their brains. In other words, this so-called 'explanation' leads us to a phenomenon which we are unable to trace back to one that is better known, because our powers of representing it fail us, because it is not made up of any ulterior elements for us, and is therefore called an 'elementary fact.' Now this signifies simply that we cannot penetrate further here; for us this is a *datum*. But shall we make ourselves believe that because we cannot *see* further there actually

is nothing further here? Gravitation is real. Surely, that means not only that it *produces* effects, but also that it is *effected*. And so it is with all 'elementary' facts. Everywhere the lines of the co-ordinate system in which we draw up our picture of the world carry us into realms of obscurity. We can refuse—and that is the meaning of positivism—to fill up this realm of obscurity with vague pictures of fancy and idealistic speculations. But we need not on that account believe that the region of light which we survey is the universe.

"I would willingly discard the name 'thing-in-itself' if it was at all suspected that any sort of ineradicable transcendentalism, dualism, or mysticism were ensconced behind it. With such stowaways I will have nothing to do. I am a convinced upholder of the monistic view of the world, and only mean that an honest confession of the limitations of our knowledge injures in no respect the cause of monism."

The following was my reply to Professor Jodl:

"Many thanks for your valuable lines. Your exposition in defence of the x in the world, it seems to me, hits the point, and here apparently lies the difference between our views, so far as a difference obtains at all, with all agreements on other important points. I regard the acceptance of the Mach and Kirchhoff definition, or rather conception, of cognition in the philosophical domain, as very important for constituting a sound positivism. And why? Because this conception renders clear the situation; because it overcomes the ignorabimus theory of agnosticism. Knowledge is not a distinct thing in the world. It is a fact which is intercatenated with other facts. It has a cause and serves a purpose. Knowledge develops

in organisms for the purpose of their adaptation to surroundings. The purpose of knowledge is found in action. If an organised being strives for something, it constructs through a combination of representative images a plan for action. An organised being is in need of such representations, which denote things in such an analogous and corresponding way, that the subjective image and the objective thing are analogous and remain in a correct relation. Knowledge, therefore, is a portrayal not only in sense-images but also in thought-symbols, for the purpose of regulating action. It is a representative remodelling of things.

"Knowledge is the product of cognition, it consists in the lucidity and correctness of representations. Cognition is that mental process through which we grasp the sameness of several phenomena. When Newton comprised the motion of the moon and the fall of a stone into one common formula, we were put in possession of a comprehension and explanation of these phenomena. They are now plain to us, and we can formulate their actions in exact terms and with mathematical precision, which can practically be applied as a basis for action. So far, good! I do not believe that on this subject there is any difference of opinion; but now you add, that this conception of knowledge and cognition is quite allowable for propædeutic and didactic purposes in the various specialities of science, but in a philosophical sense, it is wrong.

"I agree with you that it is right to concede hon-

estly the limitations of our knowledge. We know comparatively very little of the world which in its infinity surrounds us. The circle of light visible to us is by no means the universe. This consideration, however, lies in another field, and I have never thought of combating this kind of agnosticism, which I call 'the agnosticism of modesty.' I maintain that knowledge consists in a correct representation of things, and *I cannot understand what knowledge could otherwise be.* Suppose we knew everything knowable, our knowledge would be an orderly system of representations; there would be formulas, with the assistance of which we could under all circumstances predetermine the course of events. That the existence of facts is very wonderful cannot be denied; and indeed in the same way the existence of all facts, without any exception, is equally wonderful. The existence of the world, such as it is, a cosmos arranged according to law, remains grand and overwhelming even to him who has through and through understood its harmonious order. If that is your mysticism, I adopt it. I have no objection to this mysticism of sentiment. On the contrary, I endorse it. (See *Fundamental Problems*, page 157, and *Homilies of Science*, the chapter on 'The Value of Mysticism,' page 52.) This kind of mysticism is thoroughly in accord with clearness of reasoning and with the strictest precision of sound knowledge.

"Now, if knowledge is not mere representation, not a portrayal of things, not a description for the

purpose of regulating our action, pray tell me, what can it be? If we call this kind of knowledge scientific knowledge, what do you mean by philosophical knowledge? I must confess that I do not know how you can answer this question.

"'Schopenhauer says in a similar spirit: 'Physically, to be sure, everything, but metaphysically, nothing is explainable.' But what is a metaphysical explanation?

"The sole answer which I can imagine is, that a metaphysical explanation expects to receive an answer as to why the world exists at all. This question may mean either, 'How did the world originate out of nothing?' or 'What is the innermost nature of things by dint of which they exist?' The former question finds its solution in the law of the conservation of matter[1] and energy; the latter is nothing but an inquiry into the most general feature of being.

"The former is the question after the first cause; the latter after the ultimate *raison d'être* of the universe. The ontological problem originates by a confusion of these two questions.

"My answer would be, that the ontological problem is illegitimate. We apply the law of causation where we should inquire for the ultimate *raison d'être*. Ontological causality, so called, leads to the formula-

[1] We here include ether under the term "matter." Supposing the chemical elements such as we find them in experience were due to a condensation of ether, the law of the conservation of matter would not be overthrown, at least not in the sense in which it has been held by physicists.

tion of problems which are unsolvable, and to questions which are unanswerable.

"Cognition, the method of which consists in comprehending samenesses, ultimately leads to, and naturally ends in, a universal conception, which represents all the features common to all existence—the idea of being in general, of existence, or whatever we may call it. On the other hand, the law of cause and effect has not in the same sense a natural limit. We can go backward into infinity, and must again and again inquire for a cause of the cause. Only by committing the error of treating the law of reasoning after the analogy of the law of cause and effect, we can inquire for the *raison d'être* of the ultimate *raison d'être*, and expect to find a still more general law than the universal law. We want a thought-symbol which would subsume the all-comprising thought-symbol of the universal under a still wider generalisation. Figuratively speaking, we ask, after having found the centre of the circle, 'Where is the middle of the centre?'

"As soon as we become conscious of the truth that all knowledge is representation, the ontological problem, so called, disappears and is recognised as an illegitimate problem.

"You say, 'we can refuse to fill up this realm of obscurity with vague pictures of fancy and idealistic speculations,' and you regard this as 'the meaning of positivism.' This, indeed, is the meaning of the French positivism represented by Comte and Littré,

to whom unknowable essences have still a real existence; but this realm of obscurity disappears when the sham problem has been recognised as a sham problem. From my standpoint there is not even a need of filling the realm of obscurity which has a fictitious existence, originating merely through vague speculations on the ontological problem.

"The so-called ontological problem which inquires after the ultimate *raison d'être* of existence as though the universality of being could be the effect of a cause, leads to dualism. To be sure, your thoughts are thoroughly monistic, but you commit yourself to a dualistic conception when you say:

"Gravitation is real: surely that means not only that it produces effects, but also that it is *effected*."

"Here I cannot follow you. The gravitating stone produces effects. It is active itself. The stone in its connection with the universe is doing work, and I do not find myself necessitated to seek for anything metaphysical behind the stone, by which 'it is effected.' Gravity does the work, and by gravity I mean the inherent quality of the stone's mass. Shall we assume that there is something else beyond the real facts in which we must seek the cause of gravity's gravitation?

"I repeat once more, I fully recognise the immensity, the inexhaustibility, the grandeur, and the wondrousness of the existence of the world in all its details. I only object to recognising (paradoxically

speaking) that kind of cognition which never can lead to cognition."

Professor Jodl wrote back:

"I have studied your long letter of February 17th with the deepest interest and with genuine satisfaction. As I had foreseen, it makes plain our essential agreement in a number of important points, and by your exceedingly lucid presentation puts me in a position to clear up the only point in which my view appeared to you dubious:

"You ask me what I understand by 'a knowledge that is not simply imitation and reproduction with a view to regulating conduct.'

"You exclude, as I think, in a very apt manner, the question concerning the ground of existence from the knowable. I would subscribe to all that, word for word. I feel no need whatever of filling out *τὰ μετὰ τὰ φυσικὰ* with pictures of fancy; and an agnosticism and positivism that should only be a golden bridge for mysticism, is in the highest degree repugnant to me. The Comtian formula, *Vivre au grand jour*, has far more importance for me as a theoretical than as a practical principle.

"But what, then, is my objection to your position, you will say. I can tell you that now, simply enough, in the words of people who are much profounder than I, and save, in doing so, paper and postage. I will ask you to take up Locke's *Essay Concerning Human Understanding*. First, in Book 4, Chapter 11, paragraph 8, you will find a full elaboration of that organic teleology which you emphasise. If, afterwards, you will read Chapter 3 of the same work, then Chapter 6, especially from paragraph 5 onwards, comparing with that Book 2, Chapter 23, passim, and Book 3, Chapter 6, paragraph 9, you will have pretty much all that *my* agnosticism signifies; particularly, if you will take the slight additional trouble of turning to Hume's *Inquiry Concerning Human Understanding* and of reading over, sections 4 and 5, 'Sceptical

Doubts Concerning the Operations of the Understanding.' It would be impossible for me to state more plainly what I mean than is done there. You will not believe that I could hope, by means of any sort of higher speculation, which would be synonymous with higher folly, to smuggle in through a back door the knowledge there declared by a critical investigation of the nature of reason to be impossible. I accept completely your 'agnosticism of modesty,' but would have the expression understood in its extensive as well as its intensive sense. The philosopher cannot know things differently from what science does; but he must always keep before his mind the critical limitations and value of this knowledge. And in this sense only does the Mach-Kirchhoff definition appear to me insufficient.

"I believe that we now agree perfectly; for I feel sure that you will hold the expositions of Locke and Hume on the nature and limits of knowledge to be irrefutable."

Now we cannot deny that the passages cited by Professor Jodl contain much sound reasoning, and we children of the latter part of the nineteenth century are much indebted to our predecessors of the end of the seventeenth and the beginning of the eighteenth century. But it seems to me that there are several propositions of Locke and Hume to which we must take exception. I, for one, cannot regard their arguments as "irrefutable," and many of their expressions need a restatement. We confine ourselves to the most important points.

LOCKE'S UNKNOWABLE ESSENCE OF THINGS.

Locke says in his *Essay Concerning Human Understanding:*

"The nominal essence bounds the species—not the real essence which we know not.—III., vi, 7–9.

"Nor, indeed, can we rank and sort things, and consequently (which is the end of sorting) denominate them by their real essences because we know them not.—III , vi, 9.

"No proposition can be known to be true where the essence of each species mentioned is not known.—IV., vi, 4.

"This more particularly concerns substances....For, how can we be sure that this or that quality is in gold when we know not what is or is not gold? since in this way of speaking nothing is gold but what partakes of an essence, which we not knowing cannot know where it is or is not, and so cannot be sure that any parcel of matter in the world is or is not in this sense gold; being incurably ignorant whether it has or has not that which makes anything to be called 'gold,' i. e., that real essence of gold whereof we have no idea at all: this being as impossible for us to know, as it is for a blind man to tell in what flower the color of a pansy is or is not to be found, whilst he has no idea of the color of a pansy at all."—IV., vi, 497.

Strange how firmly Locke clings to his idea of substance, although he is quite conscious of the confusion into which it implicates his reasoning. He says (II., xxiii., 2):

"If any one will examine himself concerning his notion of pure substance in general, he will find he has no other idea of it at all, but only a supposition of he knows not what support of such qualities which are capable of producing simple ideas in us; which qualities are commonly called 'accidents.' If any one should be asked, 'What is the subject wherein color or weight inheres?' he would have nothing to say but, 'The solid extended parts.' And if he were demanded, 'What is it that solidity and extension inhere in?' he would not be in a much better case than the Indian before mentioned, who, saying that the world was sup-

ported by a great elephant, was asked, what the elephant rested on? to which his answer was, 'A great tortoise;' but being again pressed to know what gave support to the broad-backed tortoise, replied—something, he knew not what. And thus here, as in all other cases where we use words without having clear and distinct ideas, we talk like children; who, being questioned what such a thing is which they know not readily give this satisfactory answer, —that it is something; which in truth signifies no more, when so used, either by children or men, but that they know not what; and that the thing they pretend to know and talk of, is what they have no distinct idea of at all, and so are perfectly ignorant of it, and in the dark. The idea, then, we have, to which we give the general name 'substance,' being nothing but the supposed, but unknown, support of those qualities we find existing, which we imagine cannot subsist *sine re substante*, 'without something to support them,' we call that support *substantia*; which, according to the true import of the word, is, in plain English, 'standing under,' or 'upholding.'

Locke defines body as "an extended, solid substance," and soul as "a substance that thinks." Had not the idea "substance" been better omitted altogether? Instead of peopling all the domains of existence with unknown substances, would it not be enough to say that body is extension and solidity, and a man's soul is his thinking? Locke's philosophy shows already an anti-metaphysical trend, so much so that the natural solution of the difficulty that this mythical substance is a redundant and gratuitous invention, seems to suggest itself in many passages, and the Bishop of Worcester actually accused Locke of "almost having discarded substance out of the reason-

able part of the world." Anent this accusation, Locke replies that he does "not know what to plead to," and quotes a string of sentences in which he asserts the existence of substance, the real nature of which is unknown. As to complex ideas, such as *horse* or *stone*, which are collections of several simple ideas, Locke says (II., xxiii., Note B):

> "Because we cannot conceive how they should subsist alone, nor one in another, we suppose them existing in and supported by some common subject, which support we denote by the name *substance*; though it be certain we have no clear or distinct idea of that thing we suppose a support."

Locke declares that the uncertainty which hovers as a Damocles sword over knowledge, rendering it all through purely phenomenal, need not alarm nor disturb us, for "the relative certainty is as great as our condition needs." Our "evidence is as great as we can desire, being as certain to us as our pleasure or pain, i. e., happiness or misery, beyond which we have no concernment, either of knowing or being."

The consistent result of Locke's position is a suspension of judgment on almost every question of importance; for instance, the existence of spirits is to Locke a matter of faith (IV., xi., 12), "however true it may be that all the intelligent spirits that God ever created do still exist, yet it can never make a part of our certain knowledge." We have to abandon all attempts at demonstrating their existence and even at investigating the matter.

HUME'S SCEPTICISM.

The chapters cited by Professor Jodl from David Hume (*Enquiry Concerning Human Understanding*, Sec. IV. and V.) are of great importance, and we advise every lover of philosophy to study them carefully and critically, especially Section IV., which is entitled "Sceptical Doubts Concerning the Operations of the Understanding."[1] This chapter contains in *nuce* the fallacies of both the agnosticism and the metaphysicism of to-day.

Hume's scepticism is in itself a good thing, for he has put his finger on the sore spot of the problem of philosophy; Hume finds that all our reasoning concerning matter of fact is based upon our notion of causation. Our notion of causation again is based upon experience. But he continues: "What is the foundation of all conclusions from experience?" He adds: "This implies a new question which may be of more difficult solution and explication," and comes finally to the conclusion that as the difficulty is unsurmountable, we can have no other than "a negative answer." He says:

> "Thus the observation of human blindness and weakness is the result of all philosophy, and meets us at every turn, in spite of our endeavors to elude or avoid it."

What are Hume's arguments for this most distressing conclusion which, if it were true, would nec-

[1] Ed. L. A. Selby-Bigge, M. A., Oxford, 1894, pp. 25–39.

essarily leave a gap in every scientific world-concep tion?

Hume maintains that our knowledge of causation "is not in any instance attained by reasonings *a priori*, but arises entirely from experience" (p. 29). He declares:

"The mind can never possibly find the effect in the supposed cause, by the most accurate scrutiny and examination. For the effect is totally different from the cause, and consequently can never be discovered in it."

And the gist of his arguments is summed up in the following statements:

"That all arguments concerning existence are founded on the relation of cause and effect.

"That our knowledge of that relation is derived entirely from experience.

"That all our experimental conclusions proceed upon the supposition that the future will be conformable to the past.

"To endeavor, therefore, the proof of this last supposition by probable arguments, or arguments regarding existence, must be evidently going in a circle, and taking that for granted, which is the very point in question."

Hume sees pretty clearly the ultimate conclusions of his theory, which are nothing less than a denial of the authority of reason. He declares in a long foot-note on pages 44–45 that the distinction between rea-son and experience, useful though it may be, is at bottom "erroneous" and "at least superficial."

All our reasoning is based, according to Hume, upon a *petitio principii*. That a certain cause has

always produced a special effect in the past is no reason why the same cause will produce the same effect in the future. Hume says:

"If you insist that the inference is made by a chain of reasoning, I desire you to produce that reasoning. The connection between these propositions is not intuitive. There is required a medium which may enable the mind to draw such an inference, if indeed it be drawn by reasoning and argument. What that medium is, I must confess, passes my comprehension; and it is incumbent on those to produce it who assert that it really exists, and is the origin of all our conclusions concerning matter of fact.'

Hume presents his theory with great modesty and at the same time with extraordinary assurance. He says:

"The best expedient to prevent this confusion, is to be modest in our pretensions; and even to discover the difficulty ourselves before it is objected to us. By this means we may make a kind of merit of our very ignorance."

Hume proposes the question as much for the sake of information, as with an intention of raising difficulties, keeping, as he says, his "mind open to instruction, if any one will vouchsafe to bestow it upon" him; but having endeavored to show that none of the branches of human knowledge can afford an argument that might have escaped him, he feels confident that his scepticism is impregnable. He says:

"This negative argument must certainly, in process of time, become altogether convincing, if many penetrating and able philosophers shall turn their enquiries this way and no one be ever

able to discover any connecting proposition or intermediate step which supports the understanding in this conclusion."

In the course of time many able thinkers have adopted Hume's scepticism, and by a kind of common consensus his negative solution has developed into a philosophical dogma which has acted like a bane upon thought and is still blockading the progress of philosophy.

There is one strange thing about Hume which should have made him suspicious of his own proposition. His theory and his practice do not agree, and he feels that his philosophy is sicklied over with the pale cast of thought. He says in his *Treatise of Human nature*, IV., 2, p. 218:

"This sceptical doubt, both with respect to reason and the senses, is a malady."

To escape the evil effects of scepticism, Hume's advice is as follows:

"As the sceptical doubt arises naturally from a profound and intense reflection on those subjects, it always increases the farther we carry our reflections, whether in opposition or conformity to it. Carelessness and inattention alone can afford us any remedy. For this reason I rely entirely upon them."

With all due deference to the keenness of the great Scotchman, we cannot say that a philosophy whose sole remedy for a malady of reason lies in "carelessness and inattention" breathes the spirit of genuine inquiry or can make any claim of being "irrefutable."

Hume proposes not to make any use of his scepticism when dealing with questions of real life. So emphatic is he in the inapplicability, and that means a practical rejection, of his negativism that he says:

"None but a fool or madman will ever pretend to dispute the authority of experience."

Experience, according to Hume's theory, is a chaos of isolated items, which can never acquire authority, but in practice he considers the denial of its authority as madness. What Hume here calls "authority of experience" is nothing but his vigorously repudiated scientific certitude, the method of which, commonly called reason, is gained through a systematisation of experience.

Hume feels the sting of his inconsistency, and he explains his position by the following consideration:

"My practice, you say, refutes my doubts. But you mistake the purport of my question. As an agent, I am quite satisfied in the point; but as a philosopher, who has some share of curiosity, I will not say scepticism, I want to learn the foundation of this inference. No reading, no enquiry, has yet been able to remove my difficulty, or give me satisfaction in a matter of such importance. Can I do better than propose the difficulty to the public, even though, perhaps, I have small hopes of obtaining a solution? We shall at least, by this means, be sensible of our ignorance, if we do not augment our knowledge."

Considering Hume's arguments, I freely grant that all our knowledge is ultimately derived from experience, but my definition of experience differs from the

traditional notion. When Hume speaks of experience, he always enumerates a number of isolated cases, and calls cause and effect "two objects following one another." Kant, in close agreement with Hume's conception, calls experience "the raw material of our sensuous impressions" and carefully excludes from it all purely formal knowledge and rational judgments. Now there is no doubt that formal knowledge, be it geometrical, arithmetical, logical, or purely rational of any kind, cannot be derived from the sense-element of experience, after we have carefully eliminated from experience the quality of form. If, however, we understand by experience the whole effect of events upon sentiency, including both qualities, form and sensibility, we shall see that all the formal sciences including pure reason, our conception of the purely formal (generally misnamed the *a priori*), the notion of causation, arithmetic, geometry, algebra, and logic can very well be derived from experience. It is quite true, as Kant convincingly proves, that the purely formal sciences are ideal; they are ideal constructions built up in our mind: but the material out of which we have raised these magnificent structures, which are the notions of pure forms in various domains,—pure space, progress in time of units of counting, mere thought relations such as genus and species, etc., etc.,—have been furnished us by experience. Our notions of pure form are abstractions which we have derived by limiting our at-

tention to pure relations and excluding the things among which they obtain.

By regarding experience as a number of isolated sense-impressions without coherence, Hume starts with a wrong idea of causation. Instead of analysing some phenomenon, he makes a synthesis of what he is pleased to call cause and effect, and finds no necessary connection among them. He should first have investigated the facts and then explained the meaning of the words cause and effect; but he takes their meaning for granted, and since this meaning is nothing but a confused notion of unvariable succession, it is natural that the whole argument of Hume's scepticism is built upon sand.

The law of causation is a purely formal law, and it can justly claim the same validity as all mathematical and logical theorems. It is at bottom the same law as the law of the conservation of matter and energy, which simply means that nothing can originate out of nothing, and that all processes are transformations. The phenomena which we observe are changes, not creations and not annihilations. It is true that cause and effect are radically different, but they are not without definite connections. Cause and effect are not "objects following one another," as Hume says, but interrelated events.

Poison is not a cause, but the act of taking poison; neither is a dead mouse the effect, but the death of the mouse. Every cause is a motion, an act or an

event, which in a given system of conditions through a disturbance of their equilibrium produces other motions, acts, or events, ultimately resulting in some definite change, called the effect.

When we inquire for the reason why the cause takes effect, we want to know the natural law according to which a given agent acts uuder given conditions. Natural laws formulate in exact terms the qualities of things and are nothing more nor less than descriptions. The progress of science warrants the assumption of regarding all natural laws as forming one great system in which the more particular laws are applications of the more general laws to peculiar conditions, and all the general laws form various aspects of the universal order of nature which is at bottom the same as the simple truths of the formal sciences, such as $1 + 1 = 2$, or the angles of equilateral triangles are equal, the intrinsic necessity of which can easily be understood.

Hume's conception of causation is so confused that he constantly mixes up the ideas cause and reason, and speaks of "general causes" and "ultimate causes," when he means reasons of reasons, requiring as an answer more general and universal laws.

Our expectation that the future will resemble the past is based upon the idea that every event that happens is due to a change of place. The state of things and their actions may become very different from what they are now, and conditions may arise which

will produce unprecedented constellations, so that the same causes will no longer be attended by the same effects. But whatever may happen, events must always be due to cause, and will be the result of a mere transformation.

The medium which Hume could not find and which as he says is required to avoid the vicious circle of founding causation upon experience and experience upon causation, is contained in the eliminated portion of experience, which in his days was called the *a priori*, and which we call the purely formal or the rational. The surrounding world, through contact with which experience originates, is not like a bag of peas, a disconnected number of isolated objects; the world, our own subjectivity included, is a system of relations which in their general features (or, as Germans would say, in their *Gesetzmässigkeit*) are universal. We can describe them as what we call the laws of form.

Our ideal systems of purely formal relations can be used for reference in measuring and counting, and thus the purely formal sciences become the tools of investigation, without which science would be impossible. Our methods of investigation, which include counting, measuring, and the notion of causality, have been derived from experience; they are the formal elements of experience reduced to system and making possible a higher kind of experience, science,

which is methodical observation, experiment, and a systematic description of experience.

This is no vicious circle, but an evolution from lowly beginnings to a higher condition, and every stone of the structure of the philosophy of science, which sets forth and explains the principles of scientific inquiry, rests upon a safe foundation, the ultimate basis being experience. The medium which, as Hume said, passed his comprehension, is the systematisation of the formal elements of experience in ideal reconstructions for a so-called *a priori* application to future experiences. And we are so sure of the reliability of this medium, that, as Hume himself confesses, "none but a fool or madman will ever pretend to dispute it or reject it as the great guide of human life."

Reason, in our conception, is systematised experience; it is an ideal and methodical reconstruction of the relational element in experience. We agree accordingly with Hume when he declares that there is no reason without experience. But we cannot grant that all reasoning is mere custom, and that therefore pure reason possesses no authority save that of custom derived from a haphazard accumulation of many experiences.

Hume misunderstands the very nature of reason. Reason is not a collection of many fortuitous observations, but the quintessence of their necessary interrelations extracted from experience. Reason is not

one fact among other facts, not a faculty besides other faculties, such as sensation, but a method, and on the reliability of this method the very possibility of science depends. If we could make no other inferences than such as are drawn from disconnected experiences and not from the systematisation of experience which is called reason, all our arguments would indeed be vain, the conjunction of cause and effect would be "arbitrary and casual," and philosophy simply the recognition of the utter hopelessness of scientific aspirations.

Hume concludes his arguments with this remark:

"If I be wrong, I must acknowledge myself to be indeed a very backward scholar."

We deny the logic even of this last proposition. Hume may have been and indeed he unquestionably was a great scholar and a keen philosopher. But the fact that a man is a scholar does not make him infallible. Agassiz was a great scientist, and yet he was mistaken on the most important problem of his science. The most penetrating thinker may err in his solution of the burning question of his day, while less able minds may hit the truth, which is either due to a greater clearness of comprehension, or may sometimes happen because they are less bewildered by the knowledge of too much trivial detail.

We cannot say that Hume's expositions go to the bottom of the problem. He sees the problem but does not contribute to its elucidation. He is seeking

its solution, so far as the looseness of his terms allows him to do so, but has a peculiar instinct of avoiding a discussion of those things which would have afforded him the best assistance in solving the problem.

Hume's errors have become so popular that they permeate even to-day our whole intellectual atmosphere and exercise a baneful influence upon the minds of many prominent thinkers. How injurious the effect of this anodyne is may be gathered not only from the popularity which Mr. Spencer's lukewarm agnosticism enjoys, but also from such cases as the late Prof. Romanes's *Thoughts on Religion.* Hume's negativism has produced a stagnancy in the philosophical world which prevents the mass of our best thinkers from understanding the needs of the time and finding the solution of the great religious problem that now agitates the world. The propositions made in these pages are still a voice crying in the wilderness, but the time will come, and is near at hand, when their truth will be recognised in both the churches and the universities. Professional philosophers must bestir themselves lest they be left behind in the general advance of the sciences; and the clergy, when pressed harder and harder by unmetaphysical scepticism, will find in the author's anti-metaphysical philosophy a panoply for the defence of religion,—not of their antiquated creeds, but of a regenerated faith which has been purified in the furnace of science.

PROFESSOR ERNST MACH.

Prof. Ernst Mach, of Vienna, is one of the most representative antimetaphysical philosophers, and he expressly entitles his introductory remarks to his thoughtful book on *The Analysis of the Sensations* "Antimetaphysical." Professor Mach, accordingly, cannot be suspected of being a metaphysical philosopher; and if we conclude our discussion of the Metaphysical Residue in modern thought with an inquisition of one of his propositions, it is more because we disagree with his antimetaphysical views than that we regard him as metaphysical.

Professor Mach insists on making a difference in our scientific terminology between the description of real facts and the scaffolding which is built up around our knowledge of facts in order to make the latter comprehensible. Scientific nomenclature is full of thought-constructions which are pure theories and not facts. They are useful for the purpose of bridging the gaps of our knowledge; but without venturing into hypotheses, we could make no progress in our comprehension of nature.

We grant that science (as all knowledge) is representation, *ein Nachbilden der Thatsachen.* Conceptions are mental constructs (as we may appropriately call them); they are models built in imitation of the realities which they purport to portray. But there is one

point in which we cannot follow Professor Mach. He regards the mechanical aspect (describing the change of form) not as we do, as a universal aspect of reality, but as one abstraction of reality among many other abstractions, and he considers it as on the same level with such notions as electricity or chemical affinity. He regards the reduction of all physical processes to motions as a chimerical ideal, and declares:

"It is simply an accident of history that the development of the principle of energy in physics was not connected with the practical applications of electricity."

According to Mach the mechanical aspect appears to be more clear to us merely because we are more familiar with it. He says in his article "On the Principle of the Conservation of Energy" (*Popular Scientific Lectures*, p. 151):

"Mechanical events as simple motions in space and time best admit of observation and pursuit by the help of our highly organised senses. We reproduce mechanical processes almost without effort in our imagination. Pressure as a circumstance that produces motion is very familiar to us from daily experience. All changes which the individual personally produces in his environment or humanity brings about by means of the arts in the world, are affected through the instrumentality of the *motions*. Almost of necessity, therefore, motion appears to us as the most important physical factor. Moreover, mechanical properties may be discovered in all physical events. The sounding bell trembles, the heated body expands, the electrified body attracts other bodies. Why, therefore, should we not attempt to grasp all events under their mechanical aspect, since that is so easily apprehended and

most accessible to observation and measurement? In fact, no objection *is* to be made to the attempt to elucidate the properties of physical events by mechanical *analogies*.

"Granted that we had a perfect knowledge of the mechanical processes of nature, could we and should we, for that reason, *put out of the world* all other processes that we do not understand? On this principle it would be really the simplest course to deny the existence of the whole world."

The fact is that of molar motion we have a visual image, but our ideas concerning electricity and combinations by chemical affinity are mysterious, and their actions remain unintelligible until we can explain them by analogous events in molar mechanics. It is no accident but a matter of necessity that we cannot help trying to understand all phenomena as transformations, or changes of place; and if we are unwilling to consider this state of things as due to the nature of objective existence, we should have to say, such is the constitution of sentient beings, and especially of the thinking subject which has acquired the faculty of reason, that it must explain changes as motions which produce new constellations.

In our opinion the mechanical aspect is a more general feature of reality than electrical and chemical phenomena, all of which belong to the same category of objective nature. The attempts of physicists to understand the latter as a species of the former by considering them as molecular mechanics is no accident, but the necessary outcome of the natural relation that obtains among these abstractions. That

class of phenomena to which our sensory organs are, as it were, adapted so as to show them in the focus of our direct observation naturally appear as molar motions, and we cannot help thinking that such more subtle changes in nature, as for instance chemical combinations, are of the same character, only on a smaller scale. We cannot help thinking that if the smallest units of chemistry were rational beings, molecular mechanics would be to them such changes of place as we call molar motions, for the sensorium of these tiny creatures would be so adjusted that the changes taking place in the molecules would be in the field of their direct observation. Our molar motion would be to them what the cosmical motions of the stars are to us: they would not be directly observable, and any knowledge of them could only be inferred by a complex process of reasoning. But though the nature of the cosmical motions is quite different from the pull and push of human machinery, and though the mysterious interrelations of the atoms in molecules are again different from either, all three kinds of processes possess certain features in common which are conditioned by space and the laws of form, all three are transformations, i. e., changes of form involving displacements, viz., a new arrangement of their parts in space.

We do not regard it as purely accidental that mechanical laws are more satisfactory explanations than formulas of electrical or chemical actions. The latter

are mere names of unexplained processes; and they will remain mysterious to us until we understand the play of the forces, or, if we regard them as configurations of bodily units, how the various particles of matter move about according to purely formal laws. That there should be motions too minute for direct sense-observation is exactly what we must expect, and there is no reason to regard them as essentially different from transformations that are visible.

Professor Mach (and with him his ingenious disciple Professor Ostwald[1]) rejects the atomic theory. So do I; but I object only to the belief that atoms are concrete realities. I do not regard the atomic theory a fallacy. The term "atom" has been invented by chemists as a help for thinking the equivalence of the weight of the elements which always combine in definite proportions. In my opinion the word has no sense if applied to other phenomena, and should least of all be introduced into psychology. It has not been abstracted from psychological phenomena nor has it been invented for describing them. There is accordingly no probability that it can find there any appropriate application. We might as well expect that mathematical terms, such as lines, points, circles, etc., are applicable in psychology. The idea of conscious circles or points cannot in my mind be more

[1] Professor Ludwig Boltzmann's criticism of this anti-mechanical conception in *The Monist*, Vol. XI., No. 2, and Vol. XII., No. 1, is mainly directed against Ostwald who carries Mach's theories to extremes, or, to say the least states them very rigorously.

absurd than that of conscious atoms. The rule must be observed that we can use abstractions made for a special purpose for that purpose only; they will not serve any other purpose as well. It is true that they are often employed as analogies, but in such cases we must bear in mind that we are dealing with mere analogies.

Thus the term "atom" if considered as a *Hilfsconstruction* is a legitimate notion in chemistry. It has been invented to assist us in thinking some real facts, viz., certain proportions in which the elements combine. If we understand by atom the actual fact and nothing more, we become conscious of the equivocal character of these infinitesimal particles of existence and are forced to concede that atoms need not be, and most probably are not at all, discrete things. For all we know, they may be mere units of rotating motions, or whirls, as Thomson and Tait take them to be. Perhaps they are not even that, but simply imaginary divisions in a uniform continuum which renders them remarkably similar to the rôle which the infinitesimal plays in the calculus.

In the literal sense of the word, atoms are indivisible units which are commonly supposed to be harder than the hardest steel and more elastic than the most perfect ivory balls. Such atoms belong to the realm of fable; they are myths. But for all that, there is a reference to facts at the bottom of the terms and the mechanical part of it is perhaps the least mythical;

while their hypostatisation, as if they were concrete things and not mere features of certain processes, betrays the philosopher's atom (in contrast to that of the chemist's) to be a child of metaphysics. It is born of the same faulty method of reifying names as all other things-in-themselves, and closely considered the atom in a system of an atomistic philosophy is nothing but our famous thing-in-itself reduced to a point.

Professor Mach is quite justified in denouncing the philosopher's atomism, but for all that we must not forget that there is truth in the conception of the atomistic theory for the use of chemistry.

If Professor Mach does not follow us, it is partly the scientist's punctilious anxiety not to leave the *terra firma* of facts, partly perhaps because he does not emphasise, as we do, the radical difference between the formal and the purely sensory elements in experience. He makes the statement that science results in an economy of thought as a matter of fact and does not attempt to explain how economy of thought is possible. We find that the universality of the formal law is the reason why a recognition of it naturally results in an economy of thought. From our standpoint the law of the conservation of energy is an empirical formulation of the philosophical statement "all causation is transformation."

We may add that whether or not Professor Mach would be willing to follow us, our view does not stand

in contradiction to his but can be conceived as a wider application of it and a further corroboration of its main principles.[1]

The ultimate aim of comprehension is to reduce all difference to a variety of form and thus to describe reality in terms of formal sciences. Hence the importance of measuring and numbering; of graphic formulas or any other conceptions of tridimensional relations. All phenomena in the world would be explained if their differences could be understood as due to a difference of form, while the innermost nature of reality is conceived as the same throughout.

We might say with Kant that the constitution of the subject is such as to necessitate every thinking being to view the objective world through the spectacles of form (viz., as being in time and space and having its phenomena interconnected by causation), but having come to the conclusion that the thinking subject discovers in its mind form (viz., relativity) and is able to construct *a priori* the laws of relation only because it partakes of form in its objective aspect, as a bodily being which is moving about in space; we prefer to look upon form as an essential feature of all objective existence. Thus whenever any being exists as an actual concrete presence, it manifests itself as body, and bodily form implies juxtaposition of parts and succession of events, which

[1] For details of Professor Mach's position see the essay quoted above in his *Popular Scientific Lectures*.

means that there is space, time, and change by transformation.

Whatever view we may take of the world, the fact remains that form is the condition of law in objective nature and of comprehension in the subjective mind. Without form, there would be no uniformity of any kind, no law, no regularity, no order, no rule, no principle of action, no type, no thought, no idea, nor any moral ought, nor ideals, nor spiritual life. All life, and especially all higher life, and also the aspiration to rise higher is dependent upon form, and the formal is peculiar in this, that it possesses universality in its particular manifestations. The laws of form are universal, omnipresent, immutable; the several bodily forms are mere instances, transitory, particular, and subject to change. This contrast is at the bottom of science, of ethics, of art, of life itself, and also of religion.

TRUTH IN MYTHOLOGY.

Science should be a description of facts made in such a way as to reveal their interconnection. But since many facts are withdrawn from observation, we must fill out the gaps of our knowledge by assumptions and hypotheses. Thus the edifice of science is propped up by scaffolds and the missing links in a series of facts are filled out with auxiliary constructions (*Hilfsconstructionen*) which do not represent facts

but serve merely to render the interrelation of facts intelligible.

The ideal constructs of our scientific notions represent realities. They do not consist of scaffolds alone, and there is no scaffold which has not been erected to help in building up representations of objective facts.

Let us call the representation of facts positive science or simply truth, and the scaffolding the mythology of science, and we shall see that the road to truth leads everywhere through mythology. Certain facts of the surrounding world impress themselves upon a sentient being, and these impressions come to represent facts. These facts are not seen at once in their causal connection; they appear unconnected among themselves, and in the attempt to formulate them, to represent them, to construct them in mental images, we fill out the gaps of our knowledge with such inventions as are supplied by analogy.

Mythology, in religion as well as in science, is the indispensable ladder to truth. We cannot build without scaffolds. So we cannot construct truth without mythology. We have to introduce allegorical expressions in order to fill out gaps with analogies.

Mythology becomes fatal to the building up of truth as soon as we consider it as truth itself. The scaffold is erected simply as an assistance for building, and if the building is finished the scaffold should be torn down. The progress of science which is so much

helped by mythology has periods of purification in which the mythology is discarded. This is sometimes a difficult task, because the very terms of science are mostly both at the same time truth and mythology, building-stones and scaffold.

Take, for instance, the term atom. The chemist observes that the elements always combine in certain proportions and formulates the law of the equivalence of their atomic weights. In order to think this process, to reconstruct it in mental images, he imagines that matter consists of infinitely small particles of constant weight. This is a fiction useful for its purpose, but it may be just as erroneous as the method employed in the infinitesimal calculus of thinking of a continuous curve as consisting of a broken line of infinitely small parts, or of thinking of a certain force as being composed of a parallelogram of forces. The parallelogram of forces is a scaffold helpful for representing in mental symbols the coexistence of different abstractions of the same kind (e. g., motions of a different velocity and direction). But this scaffold is not a mere scaffold, it is not erected without any purpose; its final aim is the description of facts.

The proposition to consider light as rays travelling in straight lines is a scaffold, it is mythology; but this analogy contains a truth, it contains a real building-stone which should not be torn down with the scaffold. This truth is one-sided; it represents one feature of light and disregards other features. It

disregards entirely the transversal oscillations of the ether, yet it describes another feature,—viz., the transmission and refraction of light for the comprehension of which we need not take into consideration the undulation theory. The physicist calculates with his formula $\sin\alpha/\sin\beta = n$ the angle of refraction. There is certainly neither a sine α nor a sine β in reality, but there are certain relations of reality which are described in these expressions, and the action of the light has a definite quality which can be determined with the assistance of the formula $\sin\alpha/\sin\beta = n$.

If the scientist succeeds in determining such real qualities of things, even though it be done with the assistance of mythology, he discovers a truth. He has with the help of his scaffolds succeeded in placing a building-stone where it belongs.

Some scaffolds have to be torn down because they hinder further building; other scaffolds must remain because they assist us in modelling, and planning, and predetermining certain processes of nature. They are like staircases which enable us to reach with ease otherwise inaccessible places in towers or domes.

* * *

The idea that science is full of mythology appears strange to the non-scientific, and it is often overlooked by scientists themselves. But the idea that religious mythology, in spite of its many irrational superstitions and wrong analogies, beams with truth is also little

heeded by the many. In fact, man's method of reaching truth is the same in religion as in science.

The religious ideas such as God and soul are mental constructs which copy certain realities; but these very terms, as they are used, are mythological expressions; they are still surrounded by their scaffolds. Many people know by their own experience the usefulness and indispensability of the scaffold. Without the scaffold they would never have had an inkling of the truth, for whose representation it was built, and it is natural that they consider the scaffold as the building itself. This is the reason why the narrow-minded orthodox denounce any one who would lay hand on or tear down any part of the scaffold, which has become a hindrance to the further development of religious ideals.

Positivism, i. e., the representation of facts without any admixture of theory or mythology, is an ideal which in its purity perhaps will never be realised. Nevertheless, it is no *ignis fatuus*, no will-o'-the-wisp that leads us astray. Our science is constantly more and more approaching this ideal, and the progress of humanity is intimately connected with it.

In ethics also we should distinguish between positive facts and mythology. Ethics based upon mere theories, upon our interpretation of nature which we add to facts, is mythological; positive ethics is simply that deportment which is suggested by a comprehension of the facts themselves.

Mythological ethics may be quite correct, just as much so as the application of a mythological theory of science may be within certain limits reliable as a working hypothesis. But it is desirable to understand the nature of mythological ethics in order to distinguish between truth and fiction.

THE SOUL AS A THING-IN-ITSELF.

THE most important application of the theory of things-in-themselves applies to man's own self. If there are no things-in-themselves, it appears that we are driven to the conclusion that man is a mere conglomeration of forces with their correspondent feelings and nothing more. For in the nomenclature of the old psychology the soul is the thing-in-itself of man, and a denial of things-in-themselves it seems will lead to a denial of the existence of the soul.

WHAT IS SOUL?[1]

Mind, soul, and spirit, are synonyms; they are abstractions from the same reality with slight variations of meaning. We speak of soul when we think of the sentiments of a man; we speak of mind when we refer mainly to his rational powers and the interaction that takes place among his ideas; we speak of spirit when emphasising the significance and character of thoughts without reference to bodily conditions. We speak of the spirit of a book to denote its

[1] This essay appeared first in *The Monist*, Vol. VIII., pp. 83-99, in reply to Mr. Edward Douglas Fawcett's criticism of the author's Panlogism which is the doctrine that logic (or rather the norms of rationality) are universal.

tendency and import, but we should not say that the book is ensouled, for it has no feelings. Should the expression be used, "there is soul in the book," we could only mean that it had been written by a man of sentiment, that the soul of the book is the enthusiasm which it is liable to rouse. While a book may bear the stamp of intellectuality, we cannot speak of the mind of a book, because the book is not active. It may contain thoughts; but it does not think; it may present arguments, but it does not argue; it may be rational, but it does not reason. It cannot reply to objections which a reader may happen to make.

Assuming that the chemical elements are various forms of the same substance (which, according to the law expressed in Mendeljeff's series, is more than simply probable), and observing that the materials of which human bodies consist are not different from materials found in the air, the water, and the earth, and also in the stars, we come to the conclusion that the conditions of sentiency from which the soul takes its origin are a feature that is an inherent quality of all existence. The sentiency of a man is not inserted into his body, but is the inner aspect of his bodily organisation. It is the subjectivity of his objective existence, and is as such called "Soul."

By "soul" we understand the system and sum-total of all the different kinds of feeling that animate a sentient organism; and every feeling is conceived as the exact analogue of some nervous activity. Soul

is a commonwealth of sentiments and thoughts, of wants, and longings and plans to satisfy these desires. And this community of ideas includes notions of what might be, viz., hopes, ideals, imaginings, aspirations for things nobler, greater, better.

The peculiarity of feelings, such as we know them from our own experience, and their practical importance, consist in this, that they represent, symbolise, or denote the various things, relations, and actions with which they are severally associated. The forms of the various feelings depend upon the forms of the conditions under which they were experienced, and thus they appear as images of the surrounding world. They are subjective states of awareness and at the same time pictures of objective reality, and their memories, being aglow with life, make up the fabric of personality.

Sensations and memories remain in constant communication among themselves. By a combination of two or more images new ideas can be produced; the process of procreating new images being called imagination. The interaction that takes place among the various images or representations is called thought. When thought remains consistent with itself and in agreement with the possibilities of actual existence, it is called rational, when it begins to contradict itself, irrational.[1] Thus reason is in the province of

[1] The problems of the *a priori* and Pure Reason are discussed in *Fundamental Problems*, pp. 26–60 (Chapter "Form and Formal Thought") and in the *Primer of Philosophy*, pp. 51–117. Further in the author's translation of *Kant's*

thought that same intrinsic necessity and harmony which in objective existence is the condition of the cosmic order as it appears in the regularities which can be formulated in so-called laws of nature.

That which pertains to soul (i. e., sentiency) is called psychical; that which has meaning is called spiritual; that which characterises the rules of the interaction that takes place among soul-forms is called mental.

MENTALITY AND THE UNIVERSAL LAWS OF FORM.

Wherever feelings (that is to say, states of awareness) acquire meaning which is different according to the various forms of feeling corresponding to various forms of objective realities, there soul originates.[1] Soul, or spirit, or mind, is neither an unknowable essence nor a mystical monad-entity, but a definite condition of being which depends upon definite forms of organisation, the characteristic feature of which is representativeness. A definite form of feeling is representative if it depicts, if it stands for, and denotes a certain reality to which it has become related and associated by repeated experience. The paramount importance of representativeness is obvious, for it is the representative value of feelings which renders adaptation to the surrounding world possible. In

Prolegomena. See also *The Monist*, Vol. II., No. 1, pp. 111-120 ("The Origin of Thought-forms").

[1] For further details as to the origin of soul and mind compare the first chapters of the author's *Soul of Man.*

other words, while things devoid of mentality are at the mercy of circumstances, mind acquires the ability of directing and marshalling the forces of nature and of making them subservient to certain purposes.

There are various degrees of mentality, the highest of which is the rational comprehension of man. This leads us to the next question.

Reason is, in its last and most practical aspect, the agreement of mental actions with the universal conditions of reality.

The most important feature of reality is its form. Existence in the abstract is a mere generalisation, and as such it is that feature which all existences have in common; accordingly, it is the same throughout. But the forms of things are that feature of reality which determines the suchness of actual existence in every case. Yet, while forms vary, the laws of form are invariable and universal. The idea of a thing-in-itself is pure fiction, but the conception of form-in-itself (of pure form or absolute form) is not only correct, but it is also a truth of great importance.

The most abstract forms of thought are logical and arithmetical relations, which can be developed by purely mental experiment. The simplest instance is afforded in pure numbers, as follows.

We posit a unit (by taking a step or marking it as a dot, or a dash, or a stroke, or whatever you like) and call it "one"; we posit another unit (taking a second step or making a second mark) and call it

"two"; another, we call it "three"; again another, we call it "four." So long as we keep the same name for exactly the same operation, referring it to the same starting-point, we shall, with the same operations, always arrive at the same results. The statement "$2+2=4$" holds good for all operations in which twice two units are added, whether it be a planet that makes twice two revolutions, or whether a boy plucks twice two apples off an apple-tree; under all circumstances the result will be the same; it will *always* be four.

Statements that hold good everywhere are called universal, and universality is the characteristic feature of reason. All the laws of reason are intrinsically necessary. If we speak of necessity in connection with reason, we do not mean compulsion or coercion. The immanent necessity of mathematics and logic means nothing more nor less than that its application is without exception; necessity in this sense is a synonym of universality. Universality is the most characteristic feature of reason. He who denies the universal application of logical thought-operations denies the existence of reason. If the Logos were not universal, it is not truly the Logos. A denial of Panlogism is a denial of the applicability of reason.

Reason applies not to any particular thing alone; it refers not to here or there only, nor does it describe the yesterday nor the to-morrow alone; it applies everywhere and at all times. Its nature is ubiquity

and eternity. Reason consists of rules that formulate those features of the world which could under no circumstances be different—those which were the same from the beginning, those which would be the same for any imaginable world; it reflects the eternality of being; it is even excempt from evolution, for it describes that which does not and need not evolve in the cosmic development; it reduces to exact terms what may fittingly be called the supernatural, for it mirrors that which applies not only to nature as it actually is, but to any other, to any imaginable kind of nature; it states those laws which would remain the same even though the whole world of actual existence were broken to pieces.

Kant is surprised to find reality in agreement with pure reason, and seems to take reason (i. e., man's rationality) as the prior, and it is the prior, but only subjectively; it is not πρότερον φύσει but πρότερον πρὸς ἡμᾶς. The truth is that reality is first, and comes to us through the normal channels of experience; reality is represented in sensation, and when analysed by abstract thought, it is found to possess in its formal aspect a certain inalienable feature which is the same uniformity that conditions the cosmic order of the world and renders the formulation of its regularities possible. Reason—i. e., human reason—is nothing but a reflection of this inalienable feature of reality in consciousness, and originates with the apperception of the universality of the law of sameness.

The world-order is the most important feature of existence; it is that which constitutes the divinity of the cosmos; it is the Logos of the Neoplatonist and of the Fourth Gospel. It is hyperphysical (using the term in its literal significance to denote that which is higher than the physical) because it is the condition of all possible order.[1] It is prior not in time, but in dignity; not an antecedent, but the supreme condition of all things. It is that through which all events can be classified in laws of nature. Being in its ultimate analysis the consistency of sameness, it is also the condition of rationality in the individual reason of human beings. It is that which makes mind and purpose-regulated action possible, and is the ultimate ground on which all moral conduct rests.

Fichte's definition of God as the moral world order is not only intelligible but also sensible, but his proposition that God is the absolute ego is neither a practical idea nor is it tenable on logical grounds; it has no sense. The man who can tell us what "absolute ego" means has not as yet been found.

Fichte arrived at his notion of the absolute ego in a peculiar way. He started from an exaggerated idealism according to which the sole reality was his own ego; a proposition concerning which his students began to make their jokes, saying that Professor Fichte and Mrs. Fichte were the only two true realities in the

[1] We might call it supernatural if the word "nature" is used in its limited sense as material existence.

world. And when Fichte surrendered his idealism he did not say there was no ego-entity, but that all the various egos of human consciousness were phenomena of the absolute ego, which is God. But the individual history of Fichte's philosophical evolution does not justify us in retaining a term which testifies to the previous errors of its inventor.

As it was difficult to understand that air exists, so it is the more difficult to prove that this immaterial presence of the world-Logos is an actual reality, omnipresent and eternal.

People who are accustomed to imagine that only that exists which is material are inclined to regard formal relations and with them reason with its universalities, or in a word the Logos, as a non-entity; but it is more real than the gravity of stones and the resistance of solid bodies. It is not nowhere, but everywhere; not never, but ever. It is the most inalienable quality of being; it is the most real feature of reality, and if we do not appreciate its paramount importance it is on account of its very omnipresence and unalterable permanence. The attempt to conceive that which in its very nature is superpersonal, as an individual being, as a world-spirit or a world-monad, or as an absolute ego, is a misconception of its most important feature, of that feature which constitutes its supermateriality, supernaturality, and divinity.

UNITY AND VARIETY.

The sameness of principle that is involved in the universality of law does not mean sameness of existence throughout, nor does it exclude variety. On the contrary, it involves it. As there are not two points in the universe which, in their actual relations to the whole, are exactly equivalent, so space, time, and materiality are "the germs whence sprout the many," not by haphazard but according to the law that, under different conditions, with different surroundings, and in different periods, the same combination will be different.

Sentient beings become rational by comprehending the universal features of existence such as are expressed with precision in the formal sciences, logic, arithmetic, and mathematics. While there is no unfolding of the cosmic order, the Logos, the prototype of reason, there is an evolution of rationality in sentient beings; and this evolution follows definite laws which, however, are not yet fully understood.

Hegel regards the theory that every thesis begets an antithesis, and that the struggle between thesis and antithesis will lead to a synthesis, as the highest law of the evolution of thought, the doctrine of which he calls dialectics. He uses the theory of his dialectics as a Procrustean bed in the history of civilisation and philosophy, leading to many artificial conceptions and

vagaries. But while Hegel's dialectical method has its faults, we are not prepared to say that any and all dialectics are to be rejected.

Hegelianism in the narrow conception of its founder is overthrown but its panlogism is not doomed. Panlogism is an old theory. It has practically been the consciously or unconsciously avowed tenet of all religion and philosophy. It is the soul of Platonism; it lurks in the fantastic theosophy of Neo-Platonism; it is beautifully expressed in the Logos theory of the Fourth Gospel; it is not absent in St. Augustine and St. Thomas; among the schoolmen it is the philosophical background of realism, and finally it is the corner-stone of the spirit of modern science; it is the underlying keynote of monism, for arguments of any kind presuppose its truth. Without panlogism the universe would be a chaos of innumerable particulars, be they monads, or atoms, or what not. But if panlogism be true, the universe is necessarily and intrinsically a unity.

The unity of the universe is neither local, nor temporal, nor material; it is not comparable either to the centre of a circle, or to the monarch of an empire. The unity of a universe is a unitariness of its constitution, and not the dominion of a central monad over other monads of less importance. It is not a definite unit, but a sameness of the laws of existence, a oneness of the cosmic order. God is not one in number, but one in kind. He is unique. To believe in one

God, as opposed to several Gods, is a pagan view which is more advanced than polytheism but remains upon the same level.

THE UNITY OF CONSCIOUSNESS.

The unity of consciousness is one of the most puzzling and interesting problems. The old school of psychology knows very well that the mind consists of many images and exhibits a very complicated thought-mechanism, but they regard all thoughts as mere tools in the possession of a soul-monad. The fact that there is always one idea uppermost in a normal consciousness is explained by the assumption that the soul-monad selects one thought or another as an object of its attention. But the unity of consciousness is no more a reason for believing that man's soul consists of a monad, than the unity of a watch would be for supposing that there is in every watch an indivisible watch-monad which causes its hands to denote by their position one definite moment of time.

The fact that one idea is the strongest and monopolises consciousness is no more wonderful than that a man can walk in only one direction at a time, and not in two, three, or four, or that his eyes can focus one object only and not two, or three, or more. If every unitary action demanded the presence of a monad, we would be in need of electricity monads for electric currents, engine-monads for every machine, and national monads for every nation that has a distinct in-

dividuality and history of its own. The unity of consciousness does not imply that there is a definite and impervious centre in the conscious being but is conditioned by the object of attention, which may be a thing outside that is watched, or an idea, a purely mental representation that is considered.

The immortality of the soul depends according to the old school upon the preservation of the monad-soul of a man,—a very precarious immortality indeed, for this monad is a very hypothetical creature. The idea prevails that if the soul cannot exist in bodiless nudity as a ghost, and if body and soul are inseparably connected, the soul must die with the body.

Now it is true that monism insists in a certain sense upon the inseparableness of body and soul; we cannot cut the soul out of the body and say, here is my soul and there is my body. There are not souls-in-themselves. Wherever a soul exists, it is incarnated in a body; but while the soul is always inseparably connected with materiality, it is not identical with the body, and thus, while the body will be destroyed, the soul can be preserved.

We repeat: soul is the form of feelings, and the form of feelings depends upon the form of the nerve-activity of an organised system; and every organised system consists of definitely arranged groups of material combinations. The soul is preserved wherever the form is preserved; but the preservation of soul-forms does not depend upon the retention of those

material particles which at a given moment constitute the body. The fact is familiar that the material particles of living beings are constantly changing. Life, physiologically considered, is *Stoffwechsel* or metabolism, a constant flux of materials. There is no sameness of substance whatever. The identity of a living being involving the sentiments of consciousness is not maintained through the presence of a monad, but through the preservation of its form. All the many subconscious and conscious memories which form the elements of our mentality are definite traces of former sense-impressions, reacting upon new sense-impressions and embodying sentiments, and thoughts, the forms of which are preserved in the cerebral system, the substance of which is constantly changing. Am I for that reason another person because I cannot think the same thought twice with the same molecules? Does the thought change because the oxygen engaged in the first act of thinking has now entered new combinations and is soon to be discarded from the system as waste material? We might as well declare that the significance of a word changes when it is written once in pencil and once in ink. Man's personal identity consists not in any way in an identity of material particles, but in the sameness of form which is preserved by the continuity of his existence.

IMMORTALITY.

The continuity of life appears to be broken in death; but we must emphasise that it *is not* broken, it only *appears to be* broken. Every action in which a man manifests himself is a preservation of his peculiar personality; it preserves his individual life-forms and immortalises him. The spheres of influence vary greatly, but no man can fail within the range of his circle to impress his soul upon the future evolution of the race. The evolution of life on earth is as continuous as the life of every individual being; and every individual being is such as he is only because the soul-treasures of former life are hoarded up in him; he is not a beginning from nothing but represents the continuation of the soul-forms of which he consists at the commencement of his life. He is the product of evolution. He adds something of his own, be it little or much as the case may be, and impresses his soul into the new life that grows up around him.

These considerations are not fancies, but descriptions of the facts of life. This immortality is a truth and, indeed, an indubitable truth, which no one can deny. The same continuity of soul that takes place in every individual life, can be traced in the development of the whole of mankind.

Mr. Edward Douglas Fawcett, an upholder of the monad theory in psychology, rejects the idea of an

immanent immortality consisting in the preservation and transference of soul-forms, but offers no refutation. All he can say against it is that he is not pleased with it. He says:

"For myself I would not give two pence for an immortality of this kind, and I have no doubt that the average man in the street will heartily echo my sentiments."[1]

We may fairly grant that the average man in the street does not care for preserving his soul in the further evolution of mankind, but Mr. Fawcett will scarcely pride himself on the applause of the vulgar, should his philosophy be unfortunate enough to receive it. We might as well revive the Inquisition as an ultimate authority of orthodoxy, as enthrone the man of the street upon the tribunal of truth for deciding what shall be or shall not be acceptable. Whatever the man of the street may think, the fact remains that there is a preservation of soul-forms, and evolution would be a very mysterious process if this kind of soul-immortality through the continuous preservation of soul-forms were not true.

Quoting from me the sentence that "Christ is actually a living presence in humanity," Mr. Fawcett says:

"No, no, not so fast. The Nazarene's body has long mouldered into dust, assuming that he ever lived. His soul therefore on the lines of monistic positivism, has been extinguished. What

[1] "From Berkeley to Hegel" by Edward Douglas Fawcett, in *The Monist*, Vol. VII., No. 1., pp. 41–81.

is 'present in humanity' is not Christ, but ideas *about* Christ which is a very different matter."

Now we concede that ideas *about* Christ are not Christ himself; but the ideas *of* Christ are Christ. The soul of Jesus did not depend upon that heap of atoms which constituted his body; the soul of a man consists in the thought-forms and word-forms which dominate his entire being and determine his conduct. The soul of Jesus consists in his teachings, and his teachings are preserved in words which have now been translated into all languages of the world. The words of Jesus are his soul, and his soul is immortal, and this is good Christian teaching too; it is not a Church-dogma, but it is the doctrine of Jesus himself, viz., the Jesus of the Fourth Gospel.

We read in John vi. 63, and to indicate the importance of the quotation I quote it in large print:

"It is the spirit that quickeneth; the flesh "profiteth nothing. The words that I speak "unto you, they are spirit and they are life."

This is no figure of speech, but literal truth. Spirit is not a substance; spirit is the significance of words; and what is more significant than words that are true? Words are spirit, and it is the spirit that quickeneth. Christ lives where the word of Christ is received and where it becomes the motive of conduct. The materiality of man's life, the human body, is in its way important enough, but it is important only as the

vessel of spirit. The body is not the man; the atoms are not his soul; the corporeal is not the highest and the immortal part of our being; and, in spite of the temporary inseparableness of soul and body, there is no truth in the identification of soul and body.

The soul of a man is in one sense inseparable from his body; yet in another constitutes a distinct and disparate reality which can be preserved while the body is dissolved, so matter and energy are inseparable yet distinct. There can be no energy without matter and no matter without energy. Yet energy can be transferred from the burning coal to the water in the boiler, and from the water in the boiler through the steam to the wheels of the engine. Thus a transference of soul is accomplished by a transference of thought-forms. The essential thing that gives character to a definite soul is psychologically considered the meaning of its ideas and these physiologically considered are the structure or form of its organic constitution. The core of our character is the purposes which we pursue in life and these purposes are objectively manifested by and can be described as forms or relational conditions.

THE IMMORTALITY OF BOOKS.

Take an illustration: Here is the Bible. It consists, as all books, of many sheets of paper covered with little characters in black. Is the Bible destroyed if this copy of the Bible is burned? No, not at all.

That which constitutes the Bible is not the material; it consists of those subtle forms which convey the spirit of the Bible. The spirit of the Bible, as it is embodied in the forms of printed words, is impressed upon the paper in printer's ink, but this spirit of the Bible does not consist of paper and printer's ink. The spirit of the Bible is the meaning expressed in words and the purpose which the writers had in view. Meanings, purposes, ideas, expressed in words are called thoughts. Thoughts cannot be burned, and soul cannot be crushed by destroying one copy of the forms in which it resides. The inquisitors proposed to extirpate heresy and burned many thousands of heretics, yet they could not quench the spirit, and the heretics have now become the leading nations of the earth.

THE SIMILE OF THE SEAL.

Another instance of the preservation of form is the imprint of a seal. And indeed the simile is good because it shows, in a better way than the printing of a book, the immateriality of form. The paper receives the form of the letters which constitute the book in printer's ink. There is a transfer of matter and thus the allegory is apt to be misunderstood; but the imprint of a seal is no material transfer whatever. In making a seal-imprint we distribute a certain amount of sealing-wax on paper and stamp the seal on it. The amount of sealing-wax is the same

before and after; but before the stamping there is no seal; the seal originates through the impression.

The seal may break or be destroyed, but it can be reproduced, and, whenever the selfsame form is again imprinted on wax, there the seal will reappear. True, there is no seal without sealing-wax or whatever other material be used, but the seal is not the material; the seal is the form which is impressed upon the material.

THE PURPOSE OF LIFE.

Taking the facts of experience as the ultimate test of truth, and accepting scientifically elucidated statements of fact as the guide of conduct, we arrive at the conclusion that spirit is paramount in importance, and body is of no account whatever save in the service of the spirit. The value of anything material and also the value of our bodily make-up must be measured by its usefulness in the support and growth of the soul. In itself the flesh profiteth nothing.

Inorganic nature is indifferent; the storm, the sunlight, the ocean, are neither moral nor immoral; they are neither good nor bad; they become good or bad simply through mind. If in the starry heavens two celestial bodies should meet in collision, their conflagration would be of significance only if somewhere living souls were affected; otherwise it would be perfectly indifferent.

He who cannot comprehend the essentiality of form will never free himself from materialism in phi-

losophy, psychology, and ethics. He will not appreciate that the most important realities are immaterial. He will try to think God and soul as substances or entities, and seek the purpose of life in pleasure.

The significance of the formal is obvious, but even a Plato regarded ideas and mental images as consisting of some subtle material. The notion that vision, the sensations of sight, and with them mental images or ideas, are substantial things, lost its last hold when Newton's corpuscular theory of light broke down. We now understand that the picture in the eye is due to a transference of form and not of any material, neither breath, nor ether, nor any other substance, be it ever so subtile.

Forms themselves, the relational features of bodies, their shape, their structure, and relations of things to other things, are a reality, even though they do not consist of matter, and the laws of pure form, although purely ideal constructions, are fraught with the highest significance because they are formulas which describe the universal norms of existence. Indeed, form and everything formal may be called the supreme reality; for the formal laws are the factors that shape the world. The refinement of forms in living beings, in souls, consisting in the recognition of truth and the actualisation of ideals, based upon the objective standard of truth and tested in the furnace of experience, is the *summum bonum* and ultimate aim of life.

The standard of the highest good and the norm of moral ideals is not in happiness, but truth. The test of progress is not an increase of pleasure, but the growth of soul. It characterises the materialist to overrate the sensual and so he naturally measures the worth of life in weighing off the amounts of pleasures and pains. But the spiritual life and its appurtenances are a factor that ranges above the consideration of happiness. Happiness is an accompaniment of life, but not its aim.

Evolution consists in the expanse of the soul and in a growth of mind, but obviously there is little or no perceptible increase of happiness. The ratio between our wants and their satisfaction remains about the same, and, while it is true that many pains are alleviated, there is at the same time an increase of sensibility to pain. Thus there is rather a decrease of happiness in evolution, for children enjoy life better than adult people, and, in comparison with the lower races, who in their ignorance and simplicity are as happy as children, the most civilised people appear morose and gloomy. A wise man is not happier than a fool; on the contrary, the fool is mostly merrier than a wise man, who foregoes many joys because of his deeper wisdom. Of course there are intellectual moral pleasures, which, if not greater, are nobler, than the greatest merriment of fools. But it is not (as Mr. Fawcett thinks) the pleasure which gives value to moral aspirations. In criticising the ethical

view which I proposed under the name of meliorism, he says:

"Meliorism does not find the value of life in reaping pleasures. Nevertheless, a value that does not relieve pain or produce or tend to produce, pleasure, is a thing which I, for one, confess myself at a loss to understand. The term, in fact, seems meaningless. I fail entirely to see why we should vex ourselves here with ceaseless strivings and strugglings, when the cosy nooks of degeneration lie open to us."

Certainly we need not strive and struggle. We have our choice. We can prefer the cosy nooks of degeneration, and if we prefer them we shall have them. There are countries which are governed upon the principle that progress is an evil, and there life is, in many respects, much pleasanter and quieter. Life in England, and especially in North America, makes great demands upon the people, and urges them to exert themselves to the utmost of their abilities. He who measures the values of life by the amount of pain relieved and the greatness of pleasures realised will pity them and regard their lives as failures. How different (and I, for one, say how much truer) is the standard of value given by the psalmist when he says:

"The days of our years are threescore "years and ten; and if, by reason of strength, "they be fourscore years, *yet is their strength* "*labor and sorrow.*" (xc. 10.)

I have surrendered the Apostolic creed in its literal acceptance, but I have never ceased to appreciate

this sentence of the psalmist on account of its deep truth. In my mental evolution I have been alienated from the Christianity of my childhood; I have abandoned the dogmatism of Church-doctrines; and I have surrendered the paganism of believing in the letter that killeth. I have dared to seek the direct revelation of God in the facts of life and, in taking the consequences of my radicalism, I became more and more convinced that God spoke to the prophets and to Christ in no different language from what he speaks to us: to you, to me, or to any one who is willing to listen. However much the spirit of Bible teachings is misunderstood; nay, whatever errors the authors of the Bible may have been subject to, this much seems sure that they hit upon several very important moral truths which are by no means antiquated. From the standpoint of positive monism, I find them verified, and considering the errors of hedonistic ethics which cannot but lead people astray on the most important questions of life, I find that there is more truth in the two Bible passages quoted in this article than can be found in all the average irreligious literature of to-day. The doctrines of the old religions are in many respects misleading, but in so far as they teach right ethics, I do not hesitate to say that they reveal the truth. He who imagines that the purpose of life is enjoyment will, when he tries to realise the hedonistic principle, be unfailingly and sorely disappointed.

The evolution of mind is not important for itself alone; it is important also and mainly in its exterior life as an objective manifestation. Mind is an appearance of truth; it is an incarnation of God. The purpose of mind, accordingly, is its own self-realisation; it is a higher and higher development of truth. The purpose of life is mental growth and mental evolution. Mind hungers for truth; and truth is not only intellectual comprehension but also religious devotion; it is not mere theory but a motive for action. Thoughts are not pure conceits, but motor impulses of a definite character, and, therefore, it is not simply a notion but a power. The more man acquires of truth, the more is he ensouled by God.

Priests have built temples and cathedrals, they have carved idols and images of God, they have worshipped all kinds of symbols and regarded them as holy—but there is nothing holy except truth, and the highest aim a man can have is leading a life of truth.

PANPSYCHISM OR PANBIOTISM.

Professor Haeckel, in his article "Our Monism,"[1] propounds the theory of Panpsychism, which he considers an essential feature of monism. He says:

"One highly important principle of my monism seems to me to be that I regard *all* matter as *ensouled*, that is to say, as endowed with feeling (pleasure and pain) and with motion, or, better, with the power of motion. As elementary (atomistic) attraction and repulsion these powers are asserted in every simplest

[1] *The Monist*, Vol. II., No. 4.

chemical process, and on them is based also every other phenomenon, consequently also the highest developed soul-activity of man.

"Simplest example: sulphur and quicksilver rubbed togethter form cinnabar, a new body of entirely different properties. This is possible only on the supposition that the molecules (or atoms) of the two elements if brought within the proper distance, mutually *feel* each other, by attraction move toward each other; on the decomposition of a simple chemical compound the contrary takes place: repulsion (Empedocles's doctrine of 'the love and hatred of atoms')"

Not being able to accept Professor Haeckel's doctrine of Panpsychism, I propose what might best be called Panbiotism, briefly set forth in the maxim *πᾶν βιωτόν*; that is, everything is fraught with life; it contains life; it has the ability to live.

The word *βιωτός* is mostly used by Greek authors in the negative, as in the phrase *βίων οὐ βιωτόν*, an unlivable life, in the sense of a life unendurable or not worth living. Thus Sophocles and others. The word *βιωτός* is embodied in the term Panbiotism in its etymological sense of "livable."

I am willing to concede to Professor Haeckel that all nature is alive. Indeed, I have most emphatically insisted on the doctrine that there is a spontaneity pervading all nature. (See *Fundamental Problems*, third edition, pp. 110 et seqq.)

By spontaneity is to be understood that kind of activity which springs from the nature of the being or thing which is active. A motion that is caused by

pressure or push is not spontaneous; but a motion, the motive power of which resides in the moving object, is spontaneous. Thus a cart rolling down a hill by its own weight performs a spontaneous motion, but when drawn by horses moves, or rather is moved, by pull without any spontaneity.[1] Now, everything that exists is possessed of certain qualities; its existence is of some definite, peculiar kind, and this its peculiar kind is the character of the thing. In the character of a thing lies the source of its spontaneous actions. The spontaneous actions of the chemical elements depend upon their qualities, which always react under certain circumstances in a definite way, and under the same conditions in the same way. The action of sulphur and quicksilver lies in the nature of these elements. Their union is not passive, but active. They *are* not combined, but they *do* combine. He who observes and studies nature cannot be blind to the fact that an inalienable, intrinsic power is resident in everything that exists. This is true not only of organised life, but also of the chemical elements as well as of gravitating masses. The motion of a falling stone can, no more than the actions of oxydising substances, be considered as ultimately due to an extraneous pressure that makes them move by push,

[1] Spontaneous motion (as here defined) does not mean action without a cause; nor does the spontaneity of the cart exclude the co-operation of other spontaneities, e. g., the mass of the earth co-operates with the gravity of falling bodies; and we must consider all the factors bringing about the final result.

or to a *vis a tergo* acting upon inert matter. These motions must be spontaneous; they are due to powers inherent in the nature of reality. They are self-motions, and in this sense we say that all nature is alive.

The term "life" is here used in a broader sense than ordinarily. It means spontaneity or self-motion, while in its common signification the term "life" is restricted only to the spontaneous action of organised beings, i. e., of plants and animals. In order to distinguish life in the broader sense from the narrower or common acceptance of the term, we call the latter "organised life."

It is not impossible, and I consider it even as most probable, that the difference between Professor Haeckel and myself rests on a different usage of the term "soul." But a vague or inconsistent usage of the term, unless we are especially careful in so defining it as to prevent misunderstandings, will inevitably beget errors. Thus the doctrine of Panpsychism is liable to lead to fantastic ideas, and to cause great confusion concerning the activity of what is generally called inanimate nature.

Soul (as I understand the term) is a system of sentient symbols;[1] and the problem of the origin of the soul is solved as soon as we understand how feelings can acquire meaning.

[1] Compare the author's *Religion of Science*, pp. 35 ff. *The Soul of Man*, pp. 23-84, and *Whence and Whither*, pp. 54-102.

Suppose we have some sentient substance exposed to the impressions of the surrounding world. The sense-impressions of the surrounding world leave traces in the sentient substance; these traces, which are structures of a certain form corresponding exactly to the various impressions, are preserved and constitute a predisposition to being very easily revived by impressions of the same kind. The revival of feeling in traces left in the sentient structure from former impressions is called memory. If a new impression of the same kind as the traces of the former impressions affects a sentient being, the new impression already finds a convenient path prepared for its reception. Its peculiar vibration fits in the old trace and thus runs along very easily in the memory-grooves of former impressions, reviving at the same time the feelings perceived at their original formation. The feeling thus caused is composed of several elements, which naturally are fused into one: first, there is that kind of feeling which is produced by the present impression; secondly, there is the revival of former feelings or memory-sensations; and thirdly, there is a feeling of congruence resulting from the combination of these two. This third element is a new and a very important feature. We suppose that it is extremely insignificant in the first stages of the development of the soul, but, being a constantly growing factor, it rapidly increases in importance. The stronger and the more independent the memory-structures become, the

more clearly will their congruence with fresh sense-impressions be felt as a congruence.

This feeling of congruence is the simplest form of what psychologists generally call "recognition."

The recognition of a sense-impression, as being the same as some former sense-impression, adds to the feeling a new quality; it imparts meaning to it. This feeling of a special kind will now stand for something. In this way impressions upon sentient substance will, in the course of their natural development, simply by the repetition of similar and same impressions, come to indicate the presence of certain conditions that cause the impression. This act of indicating something, of symbolising the presence of a reality, of possessing meaning, is the birth of soul. Sense-impressions that have acquired meaning are called sensations. A sensation standing for a special object symbolises that object. Abstract ideas are symbols of a higher degree, but they remain symbols just the same. And it is the sentient symbols which constitute the soul.

Those actions which are regulated by the meanings of sentient symbols of which a soul consists should alone, according to a strict terminology, be called "psychical." The falling stone, the chemical elements, when combining or separating, etc., are alive; there is a spontanously acting power even in unorganised nature. Their movements are mechanically regulated according to the laws of form; but

the actions of unorganised nature are not determined by the meaning of feelings, and, in truth, we have no reason to believe that their feelings—granting that they really do possess feelings of some kind—are freighted with even so much as the slightest inkling of significance. In a word, there is no soul in the stone; there is no mind in the water-fall; and there is no intelligence in either oxygen or hydrogen. But there is soul wherever meaning can be found as the regulating motive of actions; there is purpose. And wherever purpose is, there is mind.

THOMAS A. EDISON'S PANPSYCHISM.

Some time ago Mr. Thomas A. Edison was interviewed on the question, "What is life?" Mr. Edison answered the question; and his view is quite in accord with Professor Haeckel's idea of panpsychism. The article appeared first in a daily newspaper. Being remarkable for its coincidence with the views of a great scientist, and coming from the pen of so interesting a man as the famous inventor of the phonograph, we deem it best to republish it in full, with the permission of Mr. Edison, who, at the same time, acknowledged the copy sent him to be correct.

This is the article:

INTELLIGENT ATOMS.

"My mind is not of a speculative order; it is essentially practical, and when I am making an experiment I think only of getting something useful, of making electricity perform work.

"I don't soar; I keep down pretty close to earth. Of course there are problems in life I can't help thinking about, but I don't try to study them out. It is necessary that they should be studied, and men fitted for that work are doing it. I am not fitted for it. I leave the theoretical study of electricity to the physicists, confining my work to the practical application of the force. It is my belief, however, that every atom of matter is intelligent, deriving energy from the primordial germ. The intelligence of man is, I take it, the sum of the intelligences of the atoms of which he is composed. Every atom has an intelligent power of selection and is always striving to get into harmonious relation with other atoms. The human body is, I think, maintained in its integrity by the intelligent persistence of its atoms, or rather by an agreement between the atoms so to persist. When the harmonious adjustment is destroyed the man dies, and the atoms seek other relations.

"I cannot regard the odor of decay but as the result of the efforts of the atoms to dissociate themselves; they want to get away and make new combinations. Man, therefore, may be regarded in some sort as a microcosm of atoms agreeing to constitute his life as long as order and discipline can be maintained. But, of course, there is dissatisfaction, rebellion and anarchy leading eventually to death, and through death to new forms of life. For life I regard as indestructible.

"All matter lives, and everything that lives possesses intelligence. Consider growing corn, for example. An atom of oxygen comes flying along the air. It seeks combination with other atoms and goes to the corn, not by chance, but by intention. It is seized by other atoms that need oxygen, and is packed away in the corn where it can do its work. Now carbon, hydrogen, and oxygen enter into the composition of every organic substance in one form of arrangement or another. The formula *CHO*, in fact, is almost universal.

"Very well, then, why does a free atom of carbon select any particular one out of 50,000 or more possible positions unless it

wants to? I cannot see how we can deny intelligence to this act of volition on the part of the atom. To say that one atom has an affinity for another is simply to use a big word. The atom is conscious if man is conscious, is intelligent if man is intelligent, exercises will-power if man does, is, in its own little way, all that man is. We are told by geologists that in the earliest periods no form of life could exist on the earth.

"How do they know that? A crystal is devoid of this vital principle, they say, and yet certain kinds of atoms invariably arrange themselves in a particular way to form a crystal. They did that in geological periods antedating the appearance of any form of life and have been doing it ever since in precisely the same way. Some crystals form in branches like a fern. Why is there not life in the growth of a crystal? Was the vital principle specially created at some particular period of the earth's history, or did it exist and control every atom of matter when the earth was molten? I cannot avoid the conclusion that all matter is composed of intelligent atoms and that life and mind are merely synonyms for the aggregation of atomic intelligence.

"Of course there is a source of energy. Nature is a perpetual motion machine, and perpetual motion implies a sustaining and impelling force.

"When I was in Berlin I met Du Bois-Reymond, and, wagging the end of my finger, I said to him, 'What is that? What moves that finger?' He said he didn't know; that investigators have for twenty-five years been trying to find out. If anybody could tell him what wagged this finger, the problem of life would be solved.

"There are many forms of energy resulting from the combustion of coal under a boiler. Some of these forms we know something about in a practical way, but there may be many others we don't know anything about.

"Perhaps electricity will itself be superseded in time, who knows? Now, a beefsteak in the human stomach is equivalent to

coal under a boiler. By oxidisation it excites energy that does work, but what form of energy is it? It is not steam pressure. It acts through the nerve-cells, performs work that can be measured in foot pounds, and can be transformed into electricity, but the actual nature of this force which produces this work—which makes effectual the mandate of the will—is unknown.

"It is not magnetism, it doesn't attract iron. It is not electricity,—at least such a form of electricity as we are familiar with. Still, here it is necessary to be guarded, because so many different forms of electricity are known to science that it would be rash to say positively that we shall not class vital energy as a form of electrical energy. We cannot argue anything from difference in speed. Nerve-force may travel as fast as electricity, once it gets started. The apparent slowness may be in the brain. It may take an appreciable time for the brain to set the force going.

"I made an experiment with a frog's leg that indicates something of the kind. I took a leg that was susceptible to galvanic current. The vibration produced a note that was as high as a piccolo. While the leg was alive it responded to the electrical current; when it was dead it would not respond. After the frog's leg had been lying in the laboratory three days I couldn't make it squeal. The experiment was conclusive as to this point: The vital force in the nerves of the leg was capable of acting with speed enough to induce the vibration of the diaphragm necessary to produce sound.

"Certainly this rate of speed is greater than physiologists appear to allow, and it seems reasonable that there is a close affinity between vital energy and electricity. I do not say they are identical; on the contrary, I say they are very like. If one could learn to make vital energy directly without fuel, that is, without beefsteak in the stomach, and in such manner that the human system could appropriate it, the elixir of life would no longer be a dream of alchemy. But we have not yet learned to make electricity directly, without the aid of fuel and steam.

"I believe this is possible; indeed, I have been experimenting in this direction for some time past. But until we can learn to make electricity, like nature, out of disturbed air, I am afraid the more delicate task of manufacturing vital energy so that it can be bottled and sold at the family grocery store will have to be deferred.

"Electricity, by the way, is properly merely a form of energy, and not a fluid. As for the ether which speculative science supposes to exist, I don't know anything about it. Nobody has discovered anything of the kind. In order to make their theories hold together they have, it seems to me, created the ether. But the ether imagined by them is unthinkable to me. I don't say I disagree with them, because I don't pretend to have any theories of that kind, and am not competent to dispute with speculative scientists. All I can say is, my mind is unable to accept the theory. The ether, they say, is as rigid as steel and as soft as butter. I can't catch on to that idea.

"I believe that there are only two things in the universe,—matter and energy. Matter I can understand to be intelligent, for man himself I regard as so much matter. Energy I know can take various forms, and manifest itself in various ways. I can understand also that it works not only upon, but through, matter. What this matter is, what this energy is, I do not know.

"However, it is possible that it is simply matter and energy, and that any desire to know too much about the whole question should be diagnosed as a disease; such a disease as German doctors are said to have discovered among the students of their universities,—the disease of asking questions."

THE NATURE OF INTELLIGENCE.

Mr. Thomas A. Edison's article is full of suggestions which invite further discussion. We must here

limit ourselves solely to those which touch the problem of Panpsychism and Panbiotism.

Any one who has read Mr. Edison's article will be struck with the strange coincidence that obtains between his and Professor Haeckel's views. The famous naturalist considers what he calls panpsychism as the corner-stone of his monism: he says that atoms possess souls; and in a similar way the famous inventor believes in the intelligence of atoms; he declares that atoms are endowed with minds. There is certainly a deep truth in this conception of nature; and yet we cannot accept it in the way it is presented by either Professor Haeckel or Mr. Edison.

With reference to Professor Haeckel's views we have explained why atoms, the actions of which are not endowed with meaning, have no soul, and also why they cannot feel pleasure and pain. It remains for us to explain why atoms are not in possession of intelligence.

What is intelligence?

That reaction upon a stimulus which takes place in the way it does because of the presence of meaning, is called mental, or intelligent action; and the ability to adjust action to mental representations is intelligence.

Intelligence is a psychical quality, and the psychical process which is preparing to act with intelligence is called deliberation. Deliberation is the successive revival of several soul-structures, either of memories

of former experiences, or of rules derived therefrom, or of advice formerly received, including also new combinations of these mental structures, and keeping in view the probable results of the intended action. In a word, deliberation is thought, and thought is an interaction among meaning-freighted feelings.

Among these ideas, which in so far as they can influence action (i. e., purposive motions) are called "motives," the strongest one will determine the result. Now, any atom of non-organised matter, say an atom of hydrogen, acts (as we said above) with spontaneity. It is in this sense as much alive as is any ever so complex vegetable or animal substance. It is self-acting, and its action reveals the innermost nature of its being just as much as the action of the man shows the character of the man.

There is, however, a great difference between the action of animal beings, whose action is regulated by the meanings of their feelings, which in their totality we call the soul, and the actions of inorganic matter, of crystals, minerals, gases, chemical elements, and gravitating masses, all of which we comprise under the name "inanimate nature." The stone's fall does not depend upon any representative feeling; it depends solely upon that quality of the stone which we popularly call its weight. Nor has the falling stone any choice whether to fall or not to fall. Under certain circumstances it falls. There is no act of deliberation preceding the fall. Nor has it any choice con-

cerning the direction of its fall. The surrounding conditions, viz., its position with regard to the centre of the earth together with its mass, determine the process. The stone's action can satisfactorily be explained without attributing to it psychical qualities. The stone possesses no soul; it is void of mentality; and although we believe that everything, organised or unorganised, is endowed with subjectivity (by which we understand the conditions of psychical life, or the potentiality of feeling and consciousness), this subjectivity can only be analogous to the blind impulse of the stone's mass. If some other, psychical or mental, subjectivity were present, we should say that it apparently does not enter as a factor in the determination of the event. Accordingly such an assumption is gratuitous. There is subjectivity, but there is no intelligence. There is potentiality of feeling, but there is no consciousness. There is present the elementary condition of that something which is going to develop into mind, but there is no mind; there is no meaning-freighted awareness of the surrounding conditions.

Says Mr. Edison:

"The intelligence of man is, I take it, the sum of the intelligence of the atoms of which he is composed."

The sum total of the intelligence of the atoms in a human body (if, in this connection, for the sake of argument, we grant that atoms are intelligent) would not as yet make up the intelligence of man. Suppose

we are contemplating a mosaic picture or inscription. Are such compositions really only the sum of the little stones? Are they not rather a certain peculiar form in which these colored stones are arranged? It is not the sum of the stones that makes the picture, but the form of their composition. The picture is not contained in any single one of them, nor is it the whole number of all the single stones: it originates through their peculiar combination and consists of the form in which they are combined.

Mr. Edison's explanation of the soul, applied to this example of a mosaic picture, would be as follows: Every little stone is in itself a little mosaic picture. The whole picture of the mosaic is the sum of the little pictures of the stones of which it is composed.

The intelligence of the soul, however, is not even as yet the form in which feeling structures combine; it originates with the representative faculty of the feeling structures. The soul is the organised totality of a set of images and abstract mental symbols representing the qualities, the influences, and the interactions of the different objects of the surrounding world, the thinking subject included.

Says Mr. Edison:

"Every atom has an intelligent power of selection and is always striving to get into harmonious relation with other atoms.

The latter is true; the former is an error. Every atom "is always striving to get into harmonious relation with other atoms"; this is its nature; and its

nature being stable, consisting of certain inalienable and intrinsic qualities, the atoms act with consistency. Certain atoms, say atoms of hydrogen, are of such a nature as to combine with certain other atoms, say atoms of oxygen, into molecules that form a certain substance of peculiar properties, which, if each atom of oxygen combines with two atoms of hydrogen, would be H_2O, or water. This substance again, having certain definite qualities, will in a temperature below freezing-point crystallise at a definite angle. The angle of crystallisation being the same for all molecules H_2O, the result will necessarily be one of most marvellous regularity. And not being able to observe the atoms in their secret activity, not knowing all the details of nature's marvellous laboratory, we are astonished to find such a wonderfully harmonious relation. And yet, considering the nature of things, we are urged to confess that it is the result of an inevitable necessity, which takes place according to strict mathematical laws.

Although every atom strives, according to its nature, to get into harmonious relation with other atoms, we do not see any "intelligent power of selection" in the province of inorganic nature. Every atom of inorganic substances acts according to its nature in one and the same way throughout. There is no choice, no selection, allowed. Choice and selection are faculties that are reserved for the higher domains of psychical life, which originates in the domain of animal ex-

istence when meaning, conditioned by the presence of sentiency, rises into being and creates the soul.

Supposing that through some combination of atoms their subjectivity be combined in such a form as to produce sentiency or feeling, we can very easily understand how this feeling will in time become representative of the conditions by which it is affected. The soul does not consist of the atoms of its organism, nor of the sum of the qualities of the atoms. The soul consists of something more subtle than matter: the soul consists of the meaning that is attached to the different forms of the feelings which obtain in living organisms.

PSYCHOLOGICAL DUALISM.

Prof. F. Max Müller as well as the late Prof. Thomas Hill Green, the founder of the Oxford transcendentalist school, start from the assumption, that man's mental activity is performed by a something which is quite distinct from its functions. This something is the thing-in-itself of the human soul. Prof. F. Max Müller says:

"If mind is the name of the work, what is the name of the worker? . . . . It is what we may call the ego as personating the self; it is what other philosophers call the monon. Let us call therefore the worker who does the work of the mind in its various aspects, the Monon or the Ego."

This conception which asks for the worker of the work is based upon a materialistic view of the human

organism. An organism is not a dead machine which must be set a-going by somebody who attends to it; it is not like a piano which needs a player to elicit music from the slumbering chords. Organisms are active and not passive, they are living and not dead. Every part of an organism is a worker and so is the whole. And if we speak of its "life" we must bear in mind that "life" is an abstract which denotes a certain inseparable quality of the organism. The work and the worker are two abstracts of one and the same thing. The reality from which these terms have been abstracted is "something working." This something working does not consist of a worker and his work, but the worker is in every part of his work. The worker of our mental activity is the function of the work. The two are identical.

The objection is made: "Whence does the activity come which appears in the realm of organised life." The answer is: Activity is a universal quality of all existence. There is no such thing as absolutely inert matter. Every chemical element combines with other elements spontaneously, according to its inherent nature and not through the influence of a worker manipulating its atoms. Spontaneity is a universal feature of reality. Nature is throughout self-working activity. And this, its most remarkable character, is preserved in its highest efflorescence in the soul of man.

ENGLISH TRANSCENDENTALISM.

Mr. F. C. Conybeare, an Oxford scholar and personal disciple of Professor Green the leader of English transcendentalism, has elaborated his master's soul-conception in an article entitled "Professor Clifford on the Soul in Nature," which appeared in *The Monist*, Vol. II., No. 2, pp. 209–224. There Mr. Conybeare assumes the existence of a Self, independent of the reality from which the idea of self has been abstracted, and attempts to prove his proposition as follows:

> "In truth there can be no relation of before and after between the two terms except for a self which takes note of the one disappearing and of the other appearing; and whenever we speak of things following one another we tacitly presuppose a self before whom the procession passes."

The transcendentalist adopts, in the realm of psychology, the error of atomism. If we accept the view that the world consists of isolated atoms, we are at a loss how to bring the atoms into relations; the unity of every group of atoms, every thing and every system of things will become a mystery. And if we look upon feelings as unrelated things-in-themselves, their connection becomes a deep problem. Mr. Conybeare solves this problem of the connection that obtains among the feelings supposed to be atomical, by postu-

lating a relation-producing entity, called the self. He says:

"No link is left, save a connecting self."

And this assumed entity of a connecting self or ego is taken to be "the heart and centre of reality." Reality, that which we have to deal with in real life and what is commonly called the objective world, appears as a second class of reality in comparison with this assumed thing-in-itself of our existence. The thing-in-itself is thus regarded as something realer than real; it is conceived to be a reality of a higher degree.

Mr. Conybeare is very explicit in the explanation of his transcendental "self." He says:

"Feelings constitute a conscious self when they become the feelings of a conscious self and not before, for except as gathered up in the unity of a self which has [sic !] memory and remains the same throughout its differences, feelings can be neither new, nor repeated, nor joined by links."

What does "self" mean? What can it mean? What is the "unity of the self"? These are questions which have not been answered to our satisfaction by the transcendentalists. Whenever they speak of the self, they lose themselves in mysticism. Their "self" is an assumed entity which they have carefully divested of everything real and actual. Their self is transcendental and not a being of the world; it is a myth.

For the sake of comprehending the nature of our

soul, we had better recapitulate the simplest possible instance of psychical activity.[1]

An irritation takes place in some sentient substance. This irritation produces an extra-commotion. We must say "extra-commotion" because all sentient substance is in a state of constant activity. This extra-commotion causes the sentient substance to assume a certain form, and while it lasts, a certain and special feeling takes place in some part of the sentient substance. This certain and special feeling ceases as soon as the extra-commotion, caused through the irritation, abates. There can be no doubt that certain effects of this extra-commotion remain. Its trace is left in the sentient substance and this trace is preserved in the constant whirl of the sentient being's normal activity. Now, we suppose that an irritation of the same kind takes place in the same sentient substance. This second irritation finds the substance no longer in the same condition. It finds the sentient substance prepared to receive it. The feeling which now appears is no longer a simple feeling. The second irritation causes a commotion as much as the first, and this commotion acts as a stimulant upon the trace left by the first irritation. This trace being again in a state of extra-commotion is revived and the same kind of feeling appears. Thus the second irritation is accompanied by a state of awareness in which two

[1] The same problem has been discussed on pages 173–174 in our discussion of Panpsychism.

feelings are blended, the revival of the former feeling and the feeling of the present irritation.

The preservation of traces left in sentient substance is the condition of memory. We understand by memory the psychical aspect thereof, and the act of reviving, so that their correspondent feelings will reappear, is called recollection.

"Memory" has been the greatest stumbling-block to our psychologists as well as to our philosophers. Even modern works written from a positive standpoint treat memory frequently as a mysterious faculty of the mind. Mr. Conybeare speaks of the self as *having* memory, while in fact, memory is one of the factors, indeed the most important factor, of all mind-activity.

Says Mr. Conybeare:

"Such a feeling [of the togetherness of two feelings] would involve memory and memory involves self-hood."

Memory does not involve any transcendental self-hood. True self-hood, viz., that which can reasonably be understood by self-hood, is not prior to, not the cause of memory; self-hood, i. e., the personality of a man, the organised unity of the psychical aspect of a human organism, is consequent upon, it is the effect of, memory. Memory is the main factor and producer of self-hood. Self-hood is the product of memory.[1]

[1] See the chapter "Soul Life and the Preservation of Form," in *The Soul of Man*, p. 418.

The self is also called the ego. What is the ego? The ego is a Latin term used in philosophical language to denote the pronoun "I," and the pronoun "I" is quite a definite nerve-structure situated in quite a definite place of the centre of language. Like all words, so also the term "I" is a symbol. Its general meaning is unequivocal; it stands for the name of the speaker. It stands for Mr. Brown, if Mr. Brown speaks of himself, for Mr. Smith, if Mr. Smith speaks of himself, etc.

What does Mr. Brown mean when he says, "*I* speak, *I* act, *I* will, *I* feel pain, *I* feel pleasure, *I* intend," etc.?

When Mr. Brown speaks, a certain number of word-structures in the centre of language are in a state of commotion, innervating the muscles of speech. Correspondent to this physiological process, a state of consciousness obtains, which is an awareness of the situation. When he adds: "I say this," it is again a special nerve-structure that is irritated into action and he might just as well say: "Mr. Brown says this." The idea of Mr. Brown, viz., of his own personality, is just as much an idea as his idea of Mr. Smith. The main difference consists in the fact that the idea of man's own personality is very much more important than the ideas representing other personalities.

The nervous structure representing the feeling of the idea "I" must be the centre of innumerable ner-

vous tracts connecting it with all those activities which when performed are thought of as done by ourselves. The "I do this" is almost constantly ready to fill the present state of consciousness and to accompany any action performed through the innervation of other brain structures.

Sentient substance is not always actually feeling. It is feeling only when in a state of extra-commotion. Systems of sentient substance are living organisms; all its structures are interconnected and most so those structures in which sentiency as well as motory impulses are differentiated—viz., the nervous structures. The extra-commotions which agitate the different nervous structures, the memories of former sense-perceptions, of sounds, of words, of ideas, depend upon the conditions of the moment. Now this and now another structure will represent the summit of commotion, and the feeling of the strongest commotion at a given time will under normal conditions appear as the contents of consciousness. It is as it were the focus in which the attention of the whole organism is centralised. That which appears in the focus is clear and distinct, while the other weaker feelings rapidly disappear into the undistinguishable general feeling of the organism as a whole, commonly called cœnæsthesis or *Gemeingefühl.*

The centre of attention is constantly changing; yet whenever a thinking creature stops to ask himself, Who is doing this? Who is willing this? Who is

thinking this? the answer is given: "I am doing this; I am willing this; I am thinking this." The structure of the little pronoun "I" seems to be the most irritable spot in the brain; it is always ready to force itself into the foreground.

The answer, "I am doing this," proposes the *totum pro parte*. The whole personality is supposed to do what a part of it is performing. The hands are executing this work; these hands of course are innervated from certain regions of the brain. Some parts of the personality are in a relative rest and have nothing to do with the work presently on hand. A commotion in a certain number of brain-structures represents the physiological aspect of a deliberation, perhaps the planning of some action. Psychologically considered certain ideas appear successively and sometimes simultaneously in the focus of consciousness. The ideas disagree and other ideas replace them until a combination is formed in which the ideas do agree. This state of agreement brings a temporary peace into the tumult of conflicting ideas; the plan is ready; it may pass into action at once, or, perhaps, the ego-structure will appear in consciousness and will quietly think: "I will do it."

When certain motor nerve-structures are innervated, they cause under normal conditions their respective muscles to contract, they produce motion. Under normal conditions the nervous process accompanying the idea "I will raise my arm" serves as an

irritation upon the cortical centre of arm-raising, yet it is not the "I" that in some mystical way raises the arm. The idea "I" has as little and as much to do with this discharge of energy as any other idea. The idea "I" is not the power behind the veil that produces the will.

What is will? As soon as some plan of action is joined with the idea that it should be executed, supposing it be not counteracted by any stronger idea that it should not be done, this combination represents a will. A will accordingly is the psychological aspect of an incipient action, and it is usually, or if it is not it can always be accompanied with the thought "I will it." But this accompanying thought however is not the energy displayed in the act of willing.

The "I will it," or "I do it," or "I perceive it" being always ready to appear together with the strongest idea in the field of consciousness, the term "ego" has acquired a specialised meaning. It means that part of a man's personality which at the time is the contents of the "I will," or "I think," i. e., it is his present state of consciousness. Every organism is a coherent system and thus all the feelings of an organism naturally blend into a unity. The strongest feeling however appears in the normal state of waking in a distinct clearness thus representing a centre of consciousness.

However, whether we use the term "ego" in the sense of the idea "I" meaning the whole personality

of the speaker, or in the sense of the present centre of consciousness, it designates in either case a definite reality, the origin and action of which are natural facts and as plain as any other psychological phenomena.

Neither the ego-idea nor the centre of consciousness are transcendental. The former is as little mystical as are the ideas dog, horse, man, etc.; the latter no less miraculous than any other feeling or display of sentiency.

THE EGO-CENTRIC VIEW ABANDONED.

The contrast between the old and the new psychology appears strongest in their conceptions of the ego. The former believes that the ego is "the thing-in-itself" of man's soul and takes it to be the centre of all psychical phenomena, while the latter looks upon the ego-idea as one idea among many other co-ordinated ideas and considers the centre of consciousness as the strongest feeling at a given time, which as such naturally predominates over and eclipses the other feelings of the organism.

The new psychology brings about a change of standpoint similar to that effected by the Copernican system in astronomy. In astronomy the geo-centric, and in psychology the ego-centric, standpoint had to be abandoned. And all things seem to be upset to those who are still accustomed to the old conception. To them the physical and moral world-conceptions

appear to become impossible. If the new view were correct, so they imagine, the entire universe would break to pieces. All our modes of speech are formed in accord with the old view. We speak of sunset and sunrise, and so in our daily conversation the little pronoun "I" plays a part which makes it seem as if the ego-idea were the centre of all soul-life and as if this "I" were the active agent in all acts of willing and doing.

The advantage of the Copernican system lies in this, that we can think of the motions of the sun and the planets in a systematic and unitary conception without being either involved in contradictions or obliged to invent mysterious qualities in the stars for explaining the velocities, directions, or other phenomena of the celestial bodies. The most important advantage however is the practical applicability of the new theory.

The old theory of the soul necessarily leads to mysticism. Fictitious facts of a transcendent character must be invented in addition to the facts observed, in order to explain the latter. The new theory after abandoning the ego-centric standpoint of the thing-in-itself of a soul shows the facts of psychic life in an harmonious and unitary conception. All facts agree among themselves and we are not in need of supplementing them with mysterious inventions. It must be emphasised, at the same time, that the new conception throws a new light upon ethics; it shows

the error and perversity of all egotism, for it would be a mistake to act as if the ego were really the centre of soul-life.

Here the new psychology comes in contact with religion. What is the practical aim of all the great religions of the world but a surrender of the ego, a renunciation of the self as the centre of our being, and the acceptance of the moral law as the regulative power of our actions? The new psychology gives a justification and a scientific explanation of Christian ethics while the latter from the standpoint of the old psychology necessarily appears as mystical and supernatural.

PERSONALITY AND EVOLUTION.

The centre of consciousness is constantly shifting, while the personality of a man is relatively constant, certain important ideas being stable and thus lending character to the whole system of thoughts and intentions.

The term personality indicating the selfhood of a man is used in several ways. First, we understand by a man's personality his bodily appearance; secondly, the whole system to his mentality, viz., his knowledge, his temperament, his character; thirdly, the history of his life, past, present, and future; fourthly, his position in life, his possessions, his connections, his influence; or at last we mean by it all

these four items together. In all these applications the man and his personality are conceived as a unity. And they are a unity. Wherever the term unity is applicable, it is most certainly applicable here. All the many facts of the history of his life are one continuous process; all the parts of his body are parts of a system, and the world of his ideas also will under normal conditions bear a certain harmonious character. Wherever in any soul the concord among the ideas has been disturbed, a state of unrest will ensue until the peace of soul is restored in one or another way. But with the same necessity as every water surface tends to present a smooth level, so the ideas in one and the same soul tend to come to a state of agreement. As every water surface has its ripples, so even that mind which has attained an undisturbed peace of soul is constantly confronted with some probblems—be they ever so trifling—producing some slight disturbances in his life.

The unity of a self, it is apparent, is the inevitable consequence of given conditions. It is not something which exists outside the personality and its constituent parts; it is in the personality and it develops together with it. Mr. Conybeare supposes that "the unity of a self remains the same throughout." This is an error, and this error vitiates Mr. Conybeare's whole concep tion of growth and evolution. He says:

"Properly speaking a thing can only be said to grow or develop when it remains the same with itself all through the process

and unfolds therein capacities which were anyhow latent in it to start with."

The truth contained in this proposition may be expressed thus: When a thing develops, some part of it remains the same during the change, so that a continuity is preserved. Yet every change of a part of an organism—such is the intimate interconnection of all its parts—produces an alteration, be it ever so small, of the whole unity. And in the course of evolution the character of the whole thing may be changed. Think of the growth of a caterpillar into a butterfly, or of an egg-cell into a man. However, the changes in the character of an adult man will become slighter and slighter the stronger certain features of his existence preserve their sameness, although the most stable personality will, nevertheless, be subject to, at least, unimportant changes as long as life lasts.

Mr. Conybeare, like his master Professor Green and all the transcendentalists, is still under the influence of a belief in the thing-in-itself. The unity of an organism which is the product of the co-operation of its parts, is not some independent thing whose business it is to gather up their single activities and bring them into relation with one another. The unity of a self is the combination of all those relations which make of its parts a systematised whole, and this unity is changing together with its constituents; as a matter of fact, we have to state that it does *not* remain constant or the same with itself. Mark that I do not

deny the unity of the soul, nor do I underrate the enormous importance of this unity. But I do deny that this unity exists independent of its parts. It is as much immanent in its parts as is melody in its notes. There is as little a transcendental self-hood as a melody in itself independent of its sounds.

The assumption of a transcendental unity which throughout the process of evolution remains the same with itself naturally leads to a wrong conception of what Mr. Conybeare calls "latent capacities." The terms potential existence and latent qualities are fertile and useful ideas, but we must beware not to employ them incorrectly. Any heap of iron ore can be called a potential sword. This is a mode of speaking which expresses the possibility that the ore can be changed somehow into a sword. But the sword does not exist at all, not even as a latent quality of the ore. The ore has no latent qualities of that kind. Those qualities of the ore which represent the potential sword are very patent to everybody who knows the art of using them properly and changing them into an actual sword.

We may say that the hen's egg contains a potential chick; but this is a mere mode of speech devised to say that the egg can be changed into a chick under certain conditions. There is no chick at all contained in the egg and nothing that is like a chick.

Evolution is not, as the name suggests, a process of unfolding; evolution is, as Christian Friedrich

Wolff calls it, an "epigenesis," i. e., the process of the additional growth of new formations. The chick is something different in kind from the egg. The unity of the egg-cell organism in the yolk is radically different from the unity of the full-fledged chick. The former shows traces of irritability but not of consciousness, while the latter exhibits unmistakable symptoms of psychical activity. The formation of the chicken-soul is a new formation as much as the growth of feathers. The feathers of the chick are an additional growth; there are no latent feathers in the egg. We might express ourselves to the effect that the egg contains the potential existence of feathers, but with the same logic we might say the egg contains a potential chicken broth.

It is, however, true that something remains constant in the process of growth. There is a preservation of form in the constant change of material particles, and this is the physiological basis of memory, so that a man of eighty may say, "I remember when I was a child," although not one particle of the substance of which the child consisted is left in him. The continuity produced through this preservation of form makes growth and evolution possible.

The preservation of memory-structures constitutes the possibility of reviving the feelings of the past; it constitutes a preservation of soul. The material parts of the body are thrown out but the form being preserved, the soul remains. And this preservation of

the soul is the basis of its additional growth through new and enlarged experience. The soul of the child is not lost in the man; it is preserved. It has lost certain features and at the same time it has gained new features, it has developed, and the unity of the soul has more or less changed with the development of the body.

What is true of the individual is also true of mankind. Mankind as a whole is different in the savage and in civilised society. Nevertheless the latter has developed from the former. Certain traits have been dropped, other radically new features have appeared. That which was valuable in the soul of primitive man is not lost. The better part of his soul still lives in the highest developed man of to-day; the continuity is preserved. And to-day all our moral instruction aims at this, so to live that our souls also will be preserved in the future evolution of humanity. The gist of ethics is to make the soul immortal.

THE "PFERDEBÜRLA."

An interesting discussion of philosophical problems in a popular form appeared in the *Deutsche Rundschau* of 1897 under the strange title of "Das Pferdebürla by F. Max Müller. In it the famous Oxford Professor prints a letter from a German-American reader of his in Pennsylvania, who, being a native of Silesia and a farmer plowing his fields with horses, not with oxen, signs himself *Das schlesische Pferdebürla*,

i. e., the horse farmer from Silesia. The letter of our Pennsylvania countryman is an exquisite piece of common sense; it is in many respects crude, but shows a healthy disposition of mind and an excellent temper. He has encountered many troubles in life, but has never lost his good humor. Considering the transiency of life, he does not mind the buffets of outrageous fortune and is prepared to meet the end joyfully. He finds that the evil in the world is constitutional and indispensable. Thus he hails badness as well as stupidity, for life would be tedious if all people were virtue-machines. As matters are, he says, we enjoy the merry fight and cherish dear ideals in our bosom. He expresses his joy at the liberalism of the Professor, but he doubts whether he is truly free, which he expresses in such sentences as these:

"Max, du bist vielleicht auch noch ein Gottesfabler. Die englische Atmosphäre mag dir zur Entschuldigung dienen!.... Max, ein ganz Freier bist du immer noch nicht."[1]

["Max, perhaps thou art still a God-romancer....The English atmosphere may be thy excuse!....Max, a truly free man, thou art not yet."]

Prof. F. Max Müller is one of the most accomplished controversionalists, not only of the present time, but of all times; and if he understands anything, he understands the art of condescension. He can argue condescendingly with dukes and other personages of high social rank, but it requires a special grace

[1] There is a special touch of humor in Pferdebürla's employment of the familiar *du* with the great Oxford Professor.

to condescend to the Pferdebürla, and the Professor has succeeded in doing it. He replied to the Pferdebürla's criticism in a long private letter, which, however, remained unanswered up to the publication of the June number of the *Deutsche Rundschau*. Did the Pferdebürla die in the meantime, or was the letter not properly addressed? We cannot tell.

The humor which pervades the controversy between the Pferdebürla and the Professor is merely an external feature; the essence of the controversy is quite serious and of deep interest, philosophical as well as practical. The Pferdebürla sums up his opinion in these words (pp. 204–205):

"Modern life is for every one who has an open mind a real high school. Max, all the German scholars, or at least the majority of them, are still under the illusion that man's spirit is a prius. Not at all, Max! Spirit is a development, a phenomenon of evolution. One should think it impossible that a thinking man who has ever observed a child could be of another opinion. Why shall we seek ghosts behind matter? Spirit is a function of living organisms, and a goose and a chicken possess it also. But why, Max, should we not merrily be satisfied with the limits of our cognition, as conditioned by experience, and surrender the infamous fable-making and tyrannical lies? The sole love which I at my fiftieth year still cherish in my bosom is the unsatiable, dear longing for that truth which fate has denied us."

The Pferdebürla is an unschooled but by no means an ignorant man. His education is apparently autodidactic and unsystematic, but he is well read and knows not only such works as Omar Khayyam but

also Schopenhauer and Dühring. He appears to contradict himself by first positively declaring that spirit is a development, that it is useless to hunt for ghosts, that we must surrender the invention of fables and lies, and then speaking of his longing for the truth which fate has denied us. If the views he proclaims are not the truth, how can he wind up the confession of his faith with the declaration that truth is not forthcoming? And if there is mystery left, why does he not recognise the fact that there is a reason for inventing fables. His philosophy must be very one-sided for "the truth which fate has denied him," remains after fifty years still his sole love and he cherishes it dearly in his bosom.

PROF. F. MAX MÜLLER.

Now, we ask: What has the great Sanskrit scholar to say in reply to the Pferdebürla's criticism? The Professor gives the Pennsylvania farmer all the information he asks for, and sets forth his reasons for still believing in ghosts.

Prof. F. Max Müller's letter to the Pferdebürla is interesting because it is the quintessence of his philosophy and the gist of his religious confession of faith.

Prof. F. Max Müller is a philologist, and his whole method of thought is philological. His philosophical arguments are ultimately based on reflexions upon linguistic relations. He recognises the permanence

of universal types such as dogs, men, trees, etc. These types, or Platonic ideas, are the thoughts behind the things, and the great philologist argues: "If there are rational thoughts in nature, there must be also a rational thinker," and this rational thinker must be "in, above, and behind nature."

The same argument is repeated in other forms with reference to natural selection, evolution, and every event that takes place, especially in man's activity of the senses. If there is natural selection, there must be, according to Prof. Max Müller, some one who selects; for there can be no choice without a chooser, and every happening presupposes an agent that causes it. Seeing, hearing, touching, would be impossible if there were not a receiver of sensations.

Prof. F. Max Müller's theory is a very old theory; it is the doctrine of Self as taught in ancient Brahmanism; and he frankly confesses that it is practically the same doctrine as the theory of the ghost-soul. He adds: "Ohne solches Seelengespenst kommen wir nicht aus!"

Prof. F. Max Müller's ghost is not as substantial as the ghosts of spiritualists, but it is just as real. It is not definite, but quite indefinite, and would thus be very accommodating; but its existence is nevertheless earnestly insisted upon. It is practically nothing but a personification of the unknown quantity, which cannot be found in matter and energy. The Professor says:

"Names do not name him. That is true. Perhaps it had been better to call him *x* or the Unknown One. But if we only know what we mean, why not call him spirit or *spiritus*, i. e., breath. You call him the spook, or *Seelengespenst*. The Brahmans seem to me to have found the best expression, they call him the *Urgrund* of the soul, of the ego, 'Self,' and the *Urgrund* of the non-ego of the world-soul, of God, the highest Self. They go further, and regard these two Selfs as ultimately the same Self."

The theory of self, or, as it is called in Sanskrit, "âtman," dominated the philosophy of India until Buddha came and taught the doctrine of the "anâtman," basing upon the illusoriness of the notion of self his ethics of universal compassion and love. Buddhism flourished for about a thousand years in India, and this period was the age of highest development of Indian art, science, and poetry. Even the ancient productions of Brahmanical literature received their final shape during the Buddhist period of Indian history. After Buddhism was expelled from India, the philosophy of the âtman was systematised by Shankara, and became again predominant in the minds of the Hindus. Modern Hinduism is saturated with the belief in the âtman, and all Hindu religion to-day is practically an âtman philosophy mythologically expressed.

What is the âtman theory weighed in the balance of science?

The assumption of a self within, above, and behind things is simply the reification (or hypostatisation) of the unity that originates by a combination. It

is a personification of actions and processes and may thus be considered as mythology taken seriously. A wrong interpretation of language is perhaps at the bottom of the whole mistake. We say "the wind blows," and the metaphysical philosopher would have to regard this process, which is nothing but air in motion, as an action performed by an agent. There is the blowing that takes place and there is the wind, which is the agent that does the blowing. Sensations take place in the eye, thoughts are being thought in the brain. They are, according to Prof. F. Max Müller, actions of a seer, a hearer, a thinker, who is the self of the man, who is that which is behind his soul, who is his âtman. When we ask ourselves, What is a watch? we come to the conclusion that the watch is not the dial, nor the hands, nor the spring, nor the wheels; but a peculiar combination of all these parts so arranged that the spring carries the hands around on the dial in a regular and definite adjustment to point out the time. According to the âtman theory we ought to say, Here are a number of wheels, a spring, a dial, and hands; none of these parts is the watch. The watch itself is an unknown quantity within, above, and behind the watch, and we call it "the watch in itself" or "the âtman of the watch," or the "watchself." As to the actions of all these parts, we ought to know that not the spring exercises a pressure, but the watch-self in the spring;

and not the hands turn round the dial, but the watch-self turns in the hands.

The Buddhist philosopher, Nagasena, has brought out the anâtman theory very clearly in his discussion with King Milinda in the carriage simile. The sage claims that persons are "name and form" and nothing else, not selfs possessing a name and form, and Milinda challenges him on the ground that this theory implies the non-existence of personality. Nagasena asks the king concerning all the parts of the carriage —whether they are the carriage, and when he denies these questions, he concludes (in the same way as the king did concerning the non-existence of personality) that the carriage must be non-existent. This *reductio ad absurdum* proves that the personality of man too is a combination of certain qualities and the assumption that there is a self within, above, and behind the man is redundant. The anâtman theory does not deny either the reality of the carriage or of personalities; it only denies that the unities which originate through combination are selfs, âtmans, or things-in-themselves.

The philosophy of the Brahmans is (to use a modern term) metaphysicism; Buddhism is anti-metaphysical. The metaphysical philosopher is a philologist who reifies the words which he has coined by abstraction to denote actions or combinations or universal types. Thus reality appears to him as merely phenomenal and the word by which he denotes this

reality, the thought (or *noumenon*) which signifies it, is supposed to be the reality behind the phenomenal appearance. The reality behind the phenomenal is therefore called the noumenal, or thought-existence, and thus while reality is degraded into a mere sham, the mental reflexion of things is supposed to be the sole true reality.

This theory leads to a dualistic world-conception which divides the world into the noumenal and the phenomenal. A monistic view is regained only by a mental annihilation of the phenomenal. The corollaries of this view as characterised by Prof. F. Max Müller are as follows:

"What do we do with our senses? They seem to be our wings, but if closely analysed they are our fetters, our prison walls.

"We live in a prison, in a den, as was said already by Plato.

"Some philosophers say: Indeed our senses may be limited, but our understanding, and especially our reason, are unlimited; and they recognise nothing that would surpass them (understanding and reason).

"There is nothing that justifies us in saying that this self has had a beginning and that it will have an end. The ego had a beginning, so has the *persona*, the temporal mask which develops in the present life, but not the self which wears the mask.

"Everything which is called ego, personality, character, etc., has developed upon earth; it is earthly, but not the self.

"What remains is the eternally One (*das ewig Eine*),[1] the eternal self, which without beginning and without end animates all of us.

[1] A better translation might be "the eternal onehood."

"The self is the bond which unites all souls, the red thread which runs through all existence, and the recognition of which alone affords us a recognition of our true being.

"'Know thyself' means to us no longer know thy ego, but know what lies beyond the ego, know the self—the self which runs through the whole world, through all hearts, which is the same for all men, the same for the highest and the deepest, the same for creator and creature, the âtman of the Veda, the oldest and truest word for God.

"Fellow-man is fellow-self."

Speaking of evolution, and of his adversaries who advocate the ape-theory of the origin of species, Prof. F. Max Müller says:

"They have taught us that the body in which we live was first a simple cell. What the word 'first' in this connection may mean is another matter which need not concern us here, but this cell was really what the word signifies, the *cella* of a silent hermit, the self.

"Within this cell there is a shining point (*ein heller Punkt*), and beyond this shining point our microscopes cannot go, although whole worlds may be contained in it.

"If we accept the cell-theory in its ultimate conception, what sense can there be in the late Henry Drummond's proposition (in his *Ascent of Man*, p. 187) that the progenitors of birds and the progenitors of men were at a very remote period one and the same? Would not a little *quantum* of strict logical thought at once cut off the bold hypothesis that we derive our origin directly or indirectly from a menagerie? Every man and also the whole of mankind has passed through its own uninterrupted evolution on its own account. No man, no human cell, originates in the womb of an ape or any animal, but only in the womb of a human mother fecundated by a human father. Man does not owe his origin to an abortion."

Having recapitulated some salient features of the âtman theory which as stated by both Shankaracharya and Prof. F. Max Müller, stand in contradiction to modern science, we ask, "Is the notion of a self a mere illusion, or is there a truth hidden in it?

We believe there is a truth hidden in the idea of a self, for while there are no things-in-themselves, the organisms and other unities which originate by combination are not nonentities. They are realities. The Brahmanical âtman conception of the self is an inflated value, but the self of a man, his personality, is a very important fact. There is no metaphysical self, but there is a real self, and the error of metaphysicism cannot be overcome by denying the existence of the self but by explaining its true nature.

III. IDEAS, THE ETERNAL TYPES OF THINGS.

Prof. F. Max Müller combines his theory of the self with a Christianised version of Plato's doctrine of ideas as seen in the light of mediæval Realism:

"Behind all things lies the thought or the idea. If there are rational thoughts in nature, there must be a rational thinker. Behind all trees, oaks, birches, pines lies the thought, the idea, the form, the word, the logos of a tree. One can never see a tree, one sees only an oak, a birch, a pine, never a tree! But the thought, or the idea of the tree confronts us in all trees as realised and multiplied. The same is true of all things. No one has ever seen an animal, a man, a dog, but only a St. Bernard, a greyhound, a beagle, and closely considered not even these. What is the constant, the ever-returning in dogs, that by which they all resemble

one another, the invisible form in which they all are cast? That is the thought, the idea, the logos of dog. Now, is there a thought without a thinker?

"Where do we have a tree except in our conception? And what do conceptions consist of if not of our sensations; and these sensations, imperfect though they are, exist only in us, for us, through us. The perceived object itself is and remains to us outside, a transcendent, thing-in-itself,—everything else is our work."

In another passage the Professor declares, closely following Schopenhauer's[1] argument against the doctrine of evolution: "Every species represents an act of will, a thought," and he adds, to indicate that every species is rigid, "An diesem Gedanken kann nicht gerüttelt werden, so nahe auch oft die Versuchung liegt." Further Prof. F. Max Müller would allow us to doubt all the articles of faith in religion but one. He says: "One fundamental article must remain. There is a thinker and a governor in the world."

All these notions are a strange mixture of Realism, Nominalism, Schopenhauerianism, Platonism, Paleyism, and what not.

In the dictionary we can group words, we can classify them in categories, and no one is allowed to take away an iota from a word; but in reality the types of things fluctuate. The baby, the child, the youth, the man, are quite definite types of different ages, and no one can be allowed to mix them up.

[1] Schopenhauer was a bitter enemy of the doctrine of evolution and ridiculed Lamarck severely for having propounded it. That was before the days of Darwin.

That is a good rule for a grammar lesson, but in practical life we find them changing from one into the other in spite of Prof. F. Max Müller's protest. The same continuity holds good in the distinction between genus and species. The dog is a species of animal, and the poodle is a species of dog. He who knows something about dogs will be able to enumerate a goodly number of poodle-species. Why we should see the lower species only, as Prof. F. Max Müller declares, and not the genus to which it belongs, is a mystery which I suppose means that the concrete dog only is seen, but the generalised concept dog is thought and not seen.

The truth is we *do* see a dog in every poodle, as well as in every St. Bernard, in every beagle, and in every greyhound. The type dog is fully and completely in every genuine dog. It is true that the idea dog, as a concept, is our own work; but a general idea is not an addition to the things but an abstraction from our perceptions. It is a mental symbol expressed by a sound which signifies the general features of a number of sensations. The genus dog is not more complex than the species poodle, it is simpler; the higher genus quadruped is still simpler, and the general term animal is the simplest of all. These concepts are not made by additions, but by omissions. The incidental features are dropped and the essential ones retained, but the more general is always contained in the less general; the type is always present

in the concrete object from which it has been abstracted. The universal exists in every one of its particular representations.

What is the idea of a tree but a special form of thought, a combination of mental activities of a peculiar kind which represents certain objects of our experience? The idea of a tree is our concept, but is the tree in our conception alone and nowhere else? Certainly not. The concept tree is alone in our conception, but the tree is outside; the tree is that which the concept of a tree has been invented to signify. Ludwig Noiré argues well in favor of the theory that man alone, being a speaking animal, can conceive the idea of a tree; no animal is in possession of ideas. But Noiré would scarcely have asserted that for that reason animals could not see trees.

That the objects of our sense-perceptions remain outside is true; none will deny that, but they are for that reason not transcendent in the philosophical sense of the word; they do not remain unknown and unknowable. They are not things-in-themselves in the Kantian sense. The idea of a tree, if it be a correct conception and appropriate representation of the object in question, constitutes our knowledge of the tree. For what is knowledge if not correct representation?

REASON.

Prof. F. Max Müller regards it as obvious that "we can as little go beyond the horizon of our senses

as we can jump out of our skin." He makes this statement to prove the limits, not of the senses, but of our understanding and reason. Everybody knows that the senses have limits, but as it is difficult to understand what the limits of reason are, the Professor declares that reason is nothing but addition and subtraction, and, pillorying the exaggerated reverence in which reason is frequently held, he adds: "When people, even philosophers, speak of reason as if it were a jewel which could be placed in the drawer of the human cranium, they are myth-mongers and nothing else." Arguing from Locke's famous dictum that there is nothing in our intellect which has not before been in our senses, F. Max Müller concludes that in spite of the extensions of our horizon by addition and subtraction we feel everywhere our limitedness, our ignorance, which, considering the limitedness of our senses (these prison walls in which the self is confined), cannot be otherwise.

Now it is true that our senses are limited, but it is not true that reason is limited.

Reason, by the bye, is not mere adding and subtracting, but any purely formal operation, especially combining and separating. Addition and subtraction is one particular kind of reason, viz., arithmetical ratiocination; it is a quantitative combination and separation, but there are also qualitative combinations and separations which do not result in sums, but in new products. The composite memory-picture, or con-

cept, of a tree, for instance, is not a mere addition of several sensations in which every single impression remains intact, but a fusion in which the particular features are blurred and that which is common in all of them, the type of a tree, becomes prominent and distinct. The concept of a tree is something novel in the domain of sentiency. The general features of an object are contained in its several sensations, but by being singled out and set aside the abstract idea becomes as new as a new-born baby. And yet, the rise of concepts is not a miracle, but it is the necessary result of a combination.

While I gladly grant that Reason is a very simple operation,—analysed in its simplest functions, it is nothing but a combining and separating,—I cannot approve of Prof. F. Max Müller's derogatory remarks concerning Reason. To be sure Reason is not a jewel that can be locked up in a drawer, but it is much more than a jewel; Reason is not a lamp, lit in the brain; it is much more than a lamp, it is all the intellectual light we have; Reason is not a goddess to be worshipped by the mob (as proposed during the French Revolution); Reason is much more than a goddess. There is no need of showing contempt for anything because it is simple. Reason is the more wonderful the simpler it is, and the feats of Reason are not less important because they are as plain as daylight, obvious in their truth, transparent as glass,

and as unlimited as are the operations of counting and measuring.

Reason can indeed go beyond the horizon of our senses and our comprehension can, after all, fly on the wings of Reason into spheres that will remain forever inaccessible to our senses. Does Prof. F. Max Müller not know of the discovery of Neptune, the existence of which was positively known to Leverrier, even before Galle directed his telescope to the place where the planet had been calculated to be? Is that not a going beyond the horizon of our senses?

Prof. F. Max Müller has frequently uttered disparaging remarks concerning the reverence people show for reason, but he himself assumes always a worshipful attitude when speaking of the Logos. What difference is there between Logos and Reason, except that the former is Greek, the latter Latin? The former slipped into the New Testament, the latter into the terminology of philosophy and of common speech; the former has thus become a theological expression, the latter the party cry of Liberals. Shall we denounce Reason as ungodly and sing hymns to the divine Logos? Let us be fair and recognise the truth wherever it is, and let us boldly acknowledge that the Logos that was in the beginning, the Logos that is eternal and omnipresent, is simply combination and separation; or, as Prof. F. Max Müller would have it, addition and subtraction. But if the Logos is so simple, let us beware lest we have a contempt for it.

Its simplicity does not make it less divine, but is only one more reason to glory in its divinity.

FORMS-IN-THEMSELVES, NOT THINGS-IN-THEMSELVES.

Kant was a great philosopher, but his idea of the unknowableness of things-in-themselves is, after all, a great error, based upon the argument that purely formal thought, being *a priori*, is purely ideal. Kant's misconception originates by unconsciously identifying the terms "ideal" with "subjective." Every thinking being can construct in his own mind the mathematical laws that govern the motions of stars; hence Kant concludes that the mind dictates these purely subjective laws to the objective world; it is so constructed that it cannot help contemplating the world as being in time and space and as being subject to the categories of Reason, especially the necessary connexion of events, called causation. If form were a mode of thinking only and not a quality of the objective world, then of course, the objective world would be unknowable and we could never know what things are in themselves. But if formal thought is only one special case of form that finds its analogies everywhere in the world; if the congruence of the laws of purely formal thought with the purely formal laws of nature, is the result of a sameness of operation in two different spheres, then the things are knowable

and there is no cause for despairing of reason and its applicability to nature.

The conception of things-in-themselves is a materialistic conception of the problem; the very term is misleading. That which constitutes the suchness of a thing, its peculiar character, is its form and nothing thingish, nothing that has anything to do with matter or substance of any kind. Therefore the thing-in-itself, the self of the thing, can, properly conceived, mean only the form of the thing; and the form of the thing is its type, its logos, its noumenon, and here we agree with Prof. F. Max Müller's recognition of the eternity of all logoi. The forms of things exist not only in and with the things in which they are actualised, but are eternal types; they constitute a superreal reality, a supercosmic order of things, a supernatural nature of existence; they are the absolute that governs all relations, the uncreated that shapes all things, the unconditioned that conditions every event, every action, every being.

The forms of existence are not single entities; they are not separate, so that one cannot change into another. They constitute one continuous system and admit very well of evolution from lower simple types to higher and ever higher types. Nor can we say that the eternal logoi or ideas are products; they are not, as Prof. F. Max Müller claims, *Machwerk* manufactured by a *Macher*, a manufacturer. They are not creatures, they are uncreated. They are not made by

God, they are God themselves. The ancient Christian dogmatists denied that the logos is a manufacture; to them the logos was uncreated, but (as they expressed it) was the only begotten son born of the Father from eternity and equal to Him in divinity.

The world of forms is not chaotic, but definite and determined. We can imagine all kinds of forms, but those forms which are possible are limited according to law. The first instance of the determinedness of form is found in the chemical elements which are very limited in number. The chances of divergency increase in the spreading branches and higher complications of the tree of life, but they too are limited in their possibilities to definite types, and the laws of life are rigid according to the law of causation. In the highest sphere of life when reason appears incarnated in speech, we are again confronted with definite laws of rational action, resulting finally in a clear conception of life and its aims, which will naturally find expression in moral endeavor. Whatever things or beings originate, they are always mere realisations of the eternal order of the universe. All creation is, in this sense, an actualisation of possible types. Every invention is (as the word indicates) a finding out of a form which existed from all eternity as a possible combination, viz., as a form itself, only that it had not as yet been known.

The watch, the steam engine, the dynamo, are forms of existence which as pure forms are eternal

types that must be discovered if they are to be actualised in concrete existence; and in this sense they are indeed, as Prof. F. Max Müller says, within the things, behind them, and above them. The difference between Prof. F. Max Müller's view of things-in-themselves, and this view of forms-in-themselves, is simply this, that the former is tinged with metaphysicism and mysticism, while the latter is both antimetaphysical and antimystical.

THE SELF OF MAN.

Having seen that the selves of things are not metaphysical essences or entities, but consist in the forms that constitute their type and condition their suchness, we are naturally led to the conclusion that man's self also is the form of his being; and there is nothing that can be adduced to contradict this proposition.

Personality, says the Buddhist philosopher, is name and form; and the continuity of life, according to the maturest results of physiology and psychology, is conditioned by a preservation of form. The continuity of a man's personality is based upon his memory, and memory is the psychical aspect of a preservation of cerebral structures. Hence we can justly say that every man is a certain form realised in a bodily incarnation. The material of which this form is composed is constantly replaced by new material, and indispensable though it be for bodily appearance,

it is yet of merely incidental significance. In other words, we are not what we eat, but we are the form into which the food we eat is moulded.

Man's personality is based upon a preservation of form. The form of our organs of sense, our brain-structures, our life-memories is that which continues while the matter and the energy which we use pass through the system of our body in constant and rapid transit. We may say that matter assumes a certain shape, but it is more correct to say that a certain shape assimilates a certain amount of matter. At any rate, a man is as little the matter of which his body consists, as ideas are the ink in which the words that express them are written. Nor is man the breath (or *Hauch*) which passes through his lungs. Not even the feelings *qua* feelings can be said to be the properly human of man. Every animal, even every amœba, is sentient, it is possessed of feeling. Human sentiments are definite forms of feeling.

Everywhere form is the essential feature that makes a thing what it is, and even sentiency such as it obtains in living creatures as a characteristic feature of animal-life must be due to a definite form of organisation.

The doctrine of self is, to Prof. F. Max Müller, the corner-stone of all religion and the essence of all philosophy; but when he enters the field of ethics the tables are turned, and the self is dismissed. He says:

"At any rate, we agree that everything that is done from love

of God and our neighbor is good; everything that is done from a seeking of self is bad."

Prof. F. Max Müller's theory of self serves him only as a philosophical comfort for the lovers of self, but finds no application in ethics.

Self-seeking is wrong, as we all agree,—except such philosophers as Nietzsche and Steiner; and yet in a certain sense self-seeking is not wrong. Indeed, the preservation of self and its further evolution to higher stages is a duty. Prof. F. Max Müller's self, being the same forever and aye, cannot grow, but the real self (that which, according to Prof. F. Max Müller, is only the phenomenal self), the totality of soul-forms of man, can by new insight acquire new features. It can degenerate, but it can also improve and be added to. And in this sense ethics is a seeking of self; it is self-culture, but all self-culture is simply the realisation of the eternal pattern of perfection.

The type of a rational being is an eternal form of existence which can be realised in life. That which constitutes the humanity of man is *not* a feature which descended upon him from brute ancestors. The ape lacks rationality, and in this sense I can frankly agree with Prof. F. Max Müller in his objections to certain one-sided assertions of naturalists. That something which begot the humanity of man is the eternal Reason, the Logos, the Rationality that was developed in his soul when he began to systematise his experiences. Man's begetter, in this sense, is not his brute

progenitor, but the eternal order of the universe, which naturally and appropriately, and indeed justly and most beautifully, is symbolised under the allegory of a divine Father.[1]

* * *

We have touched upon the salient features of the problem of self, and have only to indicate in conclusion that all the religious and moral aspirations of man receive in this solution, as offered by the Philosophy of Form, a more exact and scientific explanation. The immortality of the soul appears in a new light, the idea of God is purified of paganism and mythology; and the moral code, especially the apparently anti-natural idea of universal good will—including the love of enemies—is found to be rooted in the eternal conditions of existence.

[1] The problem of the idea of God is treated in *The Open Court*, October, 1897; further in a pamphlet entitled *The Idea of God* and in *The Monist* Vol, VIII. pp. 415-445, pp. 610-615, and Vol. IX., pp. 106-130, pp. 289-291, pp. 300-305, and pp. 626-628.

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